ALBERT R. MANN
LIBRARY
AT
CORNELL UNIVERSITY

Cornell University Library
NC 703.B7
Illustrated exercises in design ....
3 1924 014 475 986
mann

Cornell University Library

The original of this book is in the Cornell University Library.

There are no known copyright restrictions in the United States on the use of the text.

http://www.archive.org/details/cu31924014475986

ILLUSTRATED
EXERCISES IN DESIGN

ILLUSTRATED
EXERCISES IN DESIGN

ELIZABETH GARRABRANT BRANCH
RECENTLY INSTRUCTOR OF ART IN NEWARK, NEW JERSEY, HIGH SCHOOL

THE PRANG COMPANY
NEW YORK CHICAGO BOSTON ATLANTA DALLAS

Copyright, 1911
The Prang Company

Order of Development

SPACING

I. Occult.

(*A*) Straight Lines.

Plate
1. Areas constructed I
2. Areas divided by one line II
3. Areas divided by two lines III
4. Areas divided by more than two lines . IV

Illustrated by:

(*a*) Plaids . . . . V–VI
(*b*) Chairs . . . . VII–VIII
(*c*) Desks IX
(*d*) Sideboards X
(*e*) Architecture . . . . XI–XII

(*B*) Curves.

1. Circles divided into areas XIII
(*a*) Illustrated by historic ornament . . XIV
2. Circles divided into variety of areas . . XV–XVI

II. Static.

1. Straight XVII
2. Curves XVIII
3. Illustrated by nature forms . . . . . XIX–XX

BALANCE

Plate
I. Principles . . . . XXI–XXII

II. Composition.

1. Pictorial . . . . XXIII–XXIV
2. Decorative . . . . XXV–XXVI
3. Decorative Applied . . . . . XXVII–XXVIII

III. Design Units.

1. Static . . . . XXIX–XXXI
2. Occult . . . . XXX–XXXII

Illustrated by balance of spaced areas.

(*a*) Book cover . . . . . . XXXIII–XXXIV
(*b*) Side walls . . . . . . XXXV–XXXVI
(*c*) Mirror-back designs XXXVII
(*d*) Book stalls XXXVIII

RHYTHM

I. Lines.

1. Straight XXXIX

Illustrated by

(*a*) Architecture XLI
(*b*) Pictures XLII

PLATE
2. Curves XL
Illustrated by
(*a*) Historic ornament . . . . . XLIII–XLIV
(*b*) Vase forms . . . . XLV–XLVI

II. MOVEMENT.

1. Rhythm . . . . XLVII–XLVIII
2. Rhythmic units . . . . XLIX–XL
(*a*) Illustrated by historic ornament . LI–LII

III. UNIT.

1. Development of unit . . . . . LIII–LIV
2. Development of unit . . . . . LV–LVI
PLATE
3. Unit adapted to material . . . . LVII–LVIII
4. Repetition of unit (one direction).
(*a*) Borders—horizontal . . . . . LIX–LX
(*b*) Borders—vertical LXI
(*c*) Borders from historic ornament . LXII
5. Repetition of unit (two directions).
(*a*) Simple surface pattern . . . LXIII–LXIV
(*b*) Complex surface pattern . . . LXV–LXVI

PICTURES

1. Studied for
(*a*) Spacing, balance and rhythm . LXVII–LXVIII
(*b*) Mounting . . . . . . LXIX–LXX

The Introduction

SINCE the days when Pan fashioned his shepherd's pipe and with enchanting music charmed naiads, dryads and mortals alike, people have loved music. Through folk songs and dances the love of harmony has been transmitted, until today the average man can distinguish between discordant and harmonious sound. But his ability to thus discriminate does not often extend beyond the realm of hearing. He does not know that there is a music of line and color, and that a wrong use of certain elements produces discords, as disagreeable to the trained and cultivated eye as harsh and unrelated sound, which we call noise, is to the ear. People, generally, are indifferent to eye music. They have not made the effort to understand Art, and they are prone to shrug their shoulders and affirm that Art is, at best, a matter of feeling, or a matter of individual taste, and so they are satisfied with their own standards. They have not yet learned that back of the outward manifestation of Art there are laws of order that must be observed if we wish to produce harmony, just as in music.

The first law of harmony is order. We cannot produce order unless we use consistent arrangement. We may name consistency, therefore, as a first principle of order. Did you ever see an inconsistent thing that was beautiful? Yet we decorate with large, realistic roses the flat wall of a room wherein we wish to hang pictures. Is this consistent? Should we look for beauty in such an arrangement? Unfortunately, usage has blinded our eyes to the glaring inconsistency of using a bed or screen of roses in place of a flat background, quiet in tone, against which pictures look their best. In our blind struggle to attain beauty we secure effects that are often ridiculous.

Inconsistency is consciously practised in the vaudeville, where it is always used to excite mirth, but surely we should avoid it in the furnishing of our homes. If you were to see a branch of weeping willow growing from the trunk of a cedar tree you would be struck at once by the great violation of a law of growth. Yet it is just as inconsistent, just as great a violation of law, for a builder to place a Moorish tower above Greek columns.

Think for a moment of a Gothic cathedral; we approach the center doorway, with its lofty, pointed arch, deep with carvings that repeat the line of the arch; we look up and find that every line of the decoration is repeating this same line of structure, until our eyes are carried up, up, by consistent movement, to the very apex of the spire. We step inside and find the same lines repeated here, in deeper, richer tones, perhaps, but still rhythmic with the structure of the building. We are thrilled with the harmony of the place. We delight in it as we delight in rich chords of music. There is not a discordant note, not an inconsistent element in the whole structure. It is a perfect example of order.

A good design, no matter how large or how small, must be like the Gothic Cathedral—consistent in thought, in material and in movement.

The second principle of order is variety. This principle we are apt to over-emphasize. There is a tendency in modern decoration to jumble circles, squares, diamond shapes and triangles together, destroying the sense of order, and excusing the confusing array on the ground of variety. It is true that we must secure variety in order to sustain interest, but variety must be consistent. Imagine a long brick wall, extending for some distance without a break. It would be monotonous. Imagine, again, that same wall with buttresses built in at regular intervals, and between the buttresses imagine the bricks set back in panels. You will agree that a gain has been made toward interest. This has been done by the practice of consistent variety.

In Design the principles of spacing and balance should be carefully studied, in order to determine what modification may be used in the unit or in its arrangement for the sake of variety. We must gain interest whenever possible, but never at the expense of order and consistency.

The law of harmony (sometimes called unity) demands that every design must make its appeal as a whole; no part of a design must call attention to itself. If, in a design, a certain shape is "out of order," if a bit of color is too bright or if a line is not rhythmic, attention will first be called to the element that is out of tune, and so the harmony of the whole will be destroyed. For example—yellow or white shoes worn with a dark-blue dress attract too much attention to the feet, because of the contrast in tone. Such extremes should be avoided, if harmony in the whole costume be the aim. Every part of a costume should possess the same character or quality. White shoes are consistent with white or light fabrics, but for the dark-blue walking skirt dark and unobtrusive values in footgear are manifestly to be selected.

Design is a process of selecting and arranging. The moment a child asks "Shall I choose this or that?" that moment he begins to *think*. If we can lead him to question "Why is this good and that bad? Why does this arrangement satisfy me, while that one disturbs?" we may feel that his brain will make for him an apperceptive basis for right thinking and seeing.

But apart from this we cannot fail to consider the commercial value of a knowledge of Design. There is today a demand for many workers in many lines who possess artistic judgment. The great fields of advertising, of interior decorating, of costume designing and of jewelry making are but a few of the many occupations open to those who have ability and judgment in artistic design.

This book is offered in the hope that the problem of bringing an understanding of Design to the pupils in our schools may be made a little easier.

The exercises have been successfully tried out in the class room and the results have been such that many requests have been made for the presentation of the whole scheme in this available form.

Some Suggestions to Teachers

THESE exercises show examples of different problems which may be given to students to teach them the principles of Order. The book is planned to give a clear conception of Design as a whole, so that students may realize that an observance of the principles of Order are as essential in the working out of a simple problem, such as the designing of a plaid, as in the larger problems of the constructive designing of furniture and architecture.

PLATE I

Object: To teach the establishment of good proportions.

In any design a thing of beauty cannot be achieved unless the proportions of the design as a whole are beautiful.

This exercise should be used as a first step in the planning of rugs, book covers, or of any other problem where the proportions of a rectangle are to be considered.

PLATE II

Object: To teach spacing for simple composition.

It is important that students should form in the beginning a sense of the value of subtle proportions. If there is a well-proportioned area to begin with, and if the composition is well spaced, the result is bound to be good.

In flower composition the plant growth must definitely cut at least one of the sides of the rectangle.

PLATE III

Object: To divide with two lines a space into greater interests.

In flower arrangements the lines of composition should precede the drawing of the flower forms.

Flowers or leaves, in composition, should never be drawn tangent to the lines of the enclosing form, but should cut through, breaking the lines of the enclosing form into well-proportioned lengths.

PLATE IV

Object: To introduce increased interest in the division of a rectangle.

The interests of trees and of other landscape features are added to well-proportioned areas, well spaced.

PLATE V

Object: To emphasize the value of subtle proportions.

This exercise should precede lessons in the spacing of door panels, balustrades, furniture, etc. Plaids offer an excellent opportunity for the teaching of color harmonies.

PLATE VI

Object: To show that the most interesting areas should be kept near the center of the enclosing form.

Small areas should not be arranged along the sides of the enclosing form, as such division tends to separate the remote areas from the whole arrangement, thus destroying unity.

This plate suggests more opportunity for the application of color problems.

PLATE VII

Object: To teach fundamental principles of constructive design.

Well-proportioned furniture needs no decoration to make it beautiful. Carving on the back of a chair makes the chair uncomfortable to sit in, and is, therefore, a transgression of the law of consistency. In working out this problem, construct first a rectangle showing the proportion of the chair as a whole. Refer to Plate I.

PLATE VIII

Object: To further elucidate the principles presented in Plate VII.

This exercise will be of particular benefit to students of manual training.

PLATE IX

Object: To emphasize the importance of good spacing.

Good spacing should be inseparably connected with good construction. Decoration should emphasize lines of construction, as shown in the placing of the panels, hinges, drawer pulls, etc.

Such exercises offer opportunities for discussions relating to the arrangement of furniture in a house. Furniture grouped in a room should be consistent in style.

PLATE X

Object: To give further opportunities for the spacing of areas in constructive design.

In working out this problem the function of a buffet should first be considered. The shelves and drawers should be spaced in well-proportioned areas.

In constructive design the first question should be: "What is the function of this object?" The next: "How can I space it so that it will fulfill its use in the most beautiful way?"

PLATE XI

Object: To study principles of spacing applied to larger problems.

After studying in the classroom photographs of recognized good examples of architecture, let the students consider the buildings in their own town. Criticise them the following day in class. Let them see if they can find buildings where round, square and diamond-shaped windows have been combined, thus violating the first law of consistency. Let them look for buildings with well-spaced windows and doors, noting if the lines of decoration follow the lines of construction.

PLATE XII

Object: To give the students good examples of spacing in architectural details.

This exercise is valuable as a lesson in thoughtful selection. Let the student go the the library and make careful drawings of similar architectural detail.

PLATES XIII AND XIV

Object: To show another phase of space division.

The student should practise swinging lines in a circle. Lines of division must swing out of the circumference and back into it, with good flow of line. They must never cut the line of the circumference at an angle. Show and let students copy examples from historic ornament, illustrating good flow of line and fine inter-relationship of parts.

PLATES XV AND XVI

Object: To follow the spacing of circles in historic ornament with exercises in individual expression.

The student in this problem creates his own design.

Be sure to impress the student with the fact that a motif placed in a circle must be circular in itself. For instance, cat-tails grow upright and are consistent only in a vertical space, whereas the cowslip swings into curves and is consistent in a circle, as here illustrated.

Circles studied thus for space division form a good basis on which to build a design in ovals or circles. Such designs may be used for belt buckles, brooches, or for tooled leather or stencil work.

PLATE XVII

Object: To teach construction of tiles.

This exercise shows interlacing bands, as illustrated in the middle design.

Show by holding a mirror along the edge of the drawing what the effect of repeating the tiles would be.

PLATE XVIII

Object: To show another phase of spacing on the line of radiation.

Careless drawing is detrimental to the development of the individual.

This problem may be applied to metal work, to enameled hatpins or box tops and to penwipers in tooled leather.

PLATES XIX AND XX

Object: To obtain from the study of nature forms a richer suggestion for design.

Study nature forms for spacing on lines of radiation and for proportion of areas. Make a set of drawings to be kept for reference, to be used some time in making a small unit for the end-piece of a chapter or for a small spot on a card. There is nothing more interesting in design than a reference book of drawings which the student himself has made.

PLATES XXI AND XXII

Object: To show that balance is important in securing rest and stability in a design.

The student should carefully study the various manifestations of Balance that are shown on these plates, and should make similar diagrams.

Every spot has shape, area and tone. When any one of these is changed it must assume a different place in the design, or else another spot must be changed, so that the attractions will balance. Teach Balance by object lessons, arranging vase forms, etc., on a mantel or shelf. First arrange two vases exactly alike so that they balance. Then arrange two vases that are unlike, so that they balance. Then add another vase and see what adjustment must be made to establish a balance.

PLATES XXIII AND XXIV

Object: To teach Balance through composition.

It is important that the student should have sufficient practice in the principles of Balance, so that he uses the same as subconsciously as he uses his alphabet. In this exercise the student should study the spray to see how it must be placed within the enclosing form in order to balance. Make a small diagram of the principal masses.

PLATES XXV AND XXVI

Object: To teach balance by means of decorative compositions.

Decorative composition prepares the student's mind for the appreciation of the conventional and abstract. The character of the growth in a plant must be retained, and may be emphasized in good decorative composition. The use of still-life as material for decorative composition offers an agreeable variety and helps to hold the interest of the student in the study of principles of Balance.

Such exercises may be applied to the designing of posters or to any bold decorative work.

PLATES XXVII AND XXVIII

Object: To teach the principles of stained glass and to teach the balance of pure color.

The student should test colors on practice paper for their relative force and apply the color accordingly, being careful that a strong color is not put on an unimportant spot.

Note that the point of interest is placed just above the exact center. The point of stability or balance in any rectangle is a point above the exact center. This may be tested by balancing a sheet of paper on a pencil point. If the point is at the exact center, the paper swings on the diagonal. If the point is just above the center the paper will remain steady.

PLATE XXIX

Object: To design units to be used in book plates, book covers, etc.

Show that the decorative unit is built on the principles of proportion and balance.

PLATE XXX

Object: To obtain another form of Balance, not symmetrical.

Plant forms lend themselves more readily to this kind of balance than other classes of material, such as still-life, animal forms and landscapes.

Units evolved in this manner may be repeated in borders. They are well adapted for stenciled decoration.

PLATES XXXI AND XXXII

Object: To teach the balance of attraction in decorative units.

This exercise is of value to show how to balance a given spot, as a flower, and not detract from its interest. The aim is also to put the student in sympathy with nature and to transmit this feeling into design. Select a flower and ask: "What is the character of this plant? What lines would best express it? Are the flowers and leaves equal or unequal in attraction? How would you balance them in a decorative unit?"

The student should study the Japanese treatment of flower rendering, as fine examples of this kind of Balance.

PLATES XXXIII AND XXXIV

Object: To teach the designing of a book cover.

The book cover is an interesting problem. Unfortunately it is often presented carelessly, and valuable lessons in spacing and balance are lost. Plate XXXIII gives the steps which should be followed and the points which should be made in presenting the lesson. The title determines the character of the motif used, and the enclosing form suggests the character of the lines to be used in the motif. The title must speak first.

PLATES XXXV AND XXXVI

Object: To teach principles of Order as applied to the home.

Color and line influence the atmosphere of the home. Home is a place where we relax and rest, where we should be the happiest; therefore the colors should be harmonious and the lines quiet. The side walls, pictures and furniture should be well spaced and balanced, so as to produce a feeling of rest. We should avoid the crowding of furniture and ornament.

PLATES XXXVII AND XXXVIII

Object: To apply decorative composition to a useful object.

Here the conventional arrangement is shown in relief, to be wrought in metal repoussé, or carved in wood. Sweep of line must follow lines of construction or lines of the enclosing form. Refer to Plates XXV and XXVI.

PLATES XXXIX AND XL

Object: To teach the different kinds of lines and their meanings.

PLATES XLI AND XLII

Object: To illustrate the use of parallel and perpendicular lines.

Students should find similar examples.

PLATES XLIII AND XLIV

Object: To illustrate the application of the compound curve.

Students should draw the different types for swing of line and should find similar examples.

PLATES XLV AND XLVI

Object: To develop individual expression.

After studying historic ornament and nature forms the student should design a pottery form or a candlestick, using the compound curve.

PLATE XLVII

Object: To present Rhythm as consistent movement.

Rhythm is seen in the fields of grain as they bow before the wind; it is seen in the restless roll of the surf; it is seen in the ripples that radiate from the prow of the boat; it is seen in the rolling hills and in the motion of great masses of tree tops.

PLATE XLVIII

Object: To present rhythm in mass.

These exercises present one of the several manifestations of Rhythm. There are rhythms of line, mass, shapes, tone and color. Rhythm is related movement.

PLATE XLIX

Object: To show the strong attractive force of curved lines.

The eye is a very sensitive organ, quickly registering spots and lines, as this exercise illustrates. Violent lines are to be avoided in design.

PLATES L, LI AND LII

Object: To teach the beauty and the restful quality in rhythmic lines, areas and tones.

Plate L illustrates by simple exercises three kinds of rhythm—rhythm of line, rhythm of areas or shapes and rhythm of tone. Plates LI and LII illustrate the principle of Rhythm by examples of historic ornament. Different peoples in different ages have made extensive use of this principle in their art.

PLATES LIII, LIV, LV AND LVI

Object: To develop conventional and abstract units from nature forms.

Naturalistic units imitate nature. This requires some skill and the result is beautiful in a single unit, but when such a unit is arranged over a surface the effect lacks unity, because there is no relationship between the repeated units and the background areas.

The Greeks expressed themselves in the abstract, as, for example, in the Greek border (Plate LXII) and also in the well-known egg and dart border, in the astragal and in the guilloche.

PLATES LVII AND LVIII

Object: To teach that material determines the nature of the design.

The more resistive the material the more abstract should be the unit. China is firm and brittle and should not be decorated with realistic flowers, for realistic flowers belong in the realm of pictures, and pictures should be framed and hung, not used to hold food. In any design consider first the function of the object, then the material to be used. These considerations will determine the motif which may be used for the decoration and the degree of conventionalization.

PLATE LIX

Object: To teach that the units of a border must partake of the same movement as the border.

In designing borders consider the movement of the enclosing lines. If horizontal, the dominant movement of the unit and the background areas must be horizontal. Vertical lines or lines of opposition are used to give strength and variety. When curved lines are used the flow of line should be horizontal.

PLATE LX

Object: To plan corner designs that are harmonious with borders.

The unit in the corners must repeat the right angle movement of enclosing lines, as the examples do on this page. A small rectangular mirror placed diagonally across the border will aid in finding an appropriate corner unit.

PLATE LXI

Object: To teach that a vertical border demands a dominant vertical movement in the units.

Horizontal lines or lines of opposition are introduced for variety and for strength. In units with curved lines the general flow of line must be vertical.

PLATE LXII

Object: To study examples of historic border.

We find from the study of history how other people have expressed themselves in borders that have been appreciated through the ages.

PLATES LXIII, LXIV, LXV AND LXVI

Object: To teach the different kinds of repeats for surface patterns.

Note that as the measurement of the repeat becomes less obvious the interest increases. The designs on Plates LXIII and LXIV, being very simple in line, would make effective stencil designs for curtains.

After the student has conventionalized a unit according to the principles of Rhythm and Balance, he should consider the different methods of securing surface repeats. He should make small diagrams, as seen in the margins of these plates. He should then consider the kind of repeat that will lend itself best to the unit selected. He should aim to keep the background areas in good proportion to the unit, and to secure a good flow of line from one unit to the other.

PLATES LXVII AND LXVIII

Object: To teach that good pictures are the result of much thought and of strict adherence to principles of Order.

Pictures studied in this way will add to the student's interest in his own work and in the study of pictures as a whole.

PLATE LXIX

Object: To show that principles of art should be applied to all kinds of work.

A written page should exemplify the principles of good spacing. This tends to establish the habit of right seeing and doing.

PLATE LXX

Object: To teach how work should be mounted in order to become effective and beautiful.

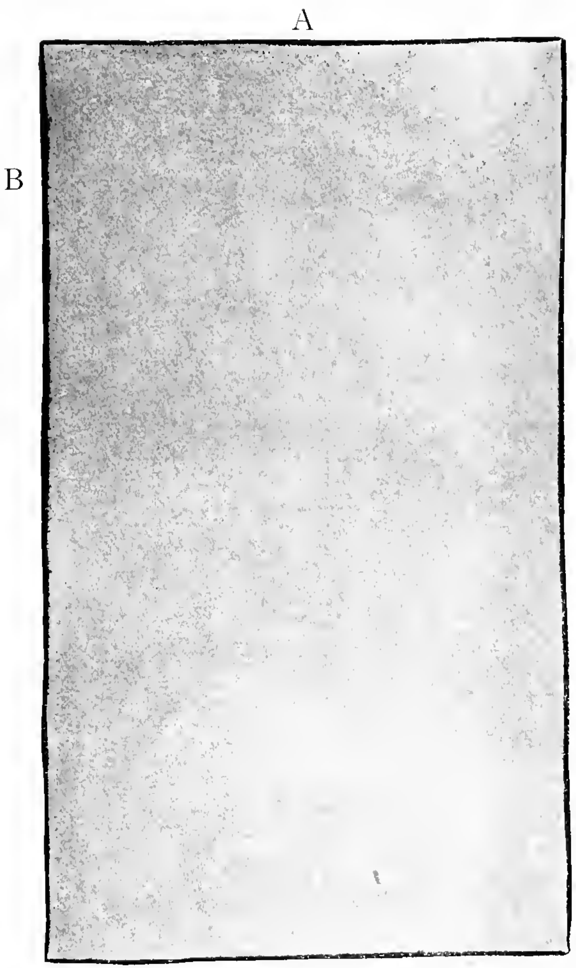
Six questions to ask when criticising any design:

1. What is its function or use?
2. Does it fulfill its function in the most satisfactory and beautiful way?
3. What material does it call for?
4. Does it need decoration?
5. If so, what kind of decoration will be consistent with its use, material and construction?
6. Do all the parts so inter-relate that they form a harmonious whole?

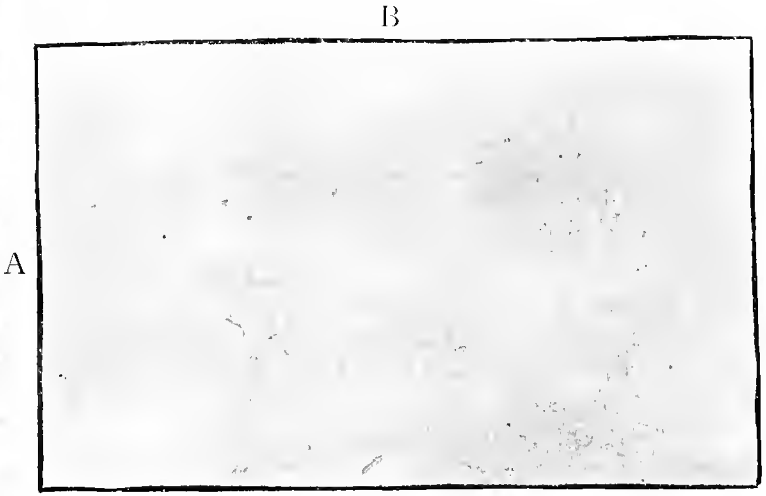
GOOD taste is essentially a moral quality. Taste is not only a part and an index of morality--it is the only morality. The first, last and closest trial question to any living creature is "What do you like?" And the entire object of education is to make people not merely do *the right things, but enjoy the right things. What we like determines what we are; and to teach taste is inevitably to form character.*

JOHN RUSKIN

PLATE I. THE PROPORTIONS OF AREAS



To obtain the most subtle and pleasing shapes avoid proportions that are exact measurements; that is, A should not be one-half, one-third, one-quarter, etc., of B. The short side A should be less than one-half and more than one-third of the length of the long side B, or A should be more than one-half and less than two-thirds of B, because exact measurements become mathematical and are, therefore, not as pleasing. The Greeks used the subtle proportions of 2 and 3.



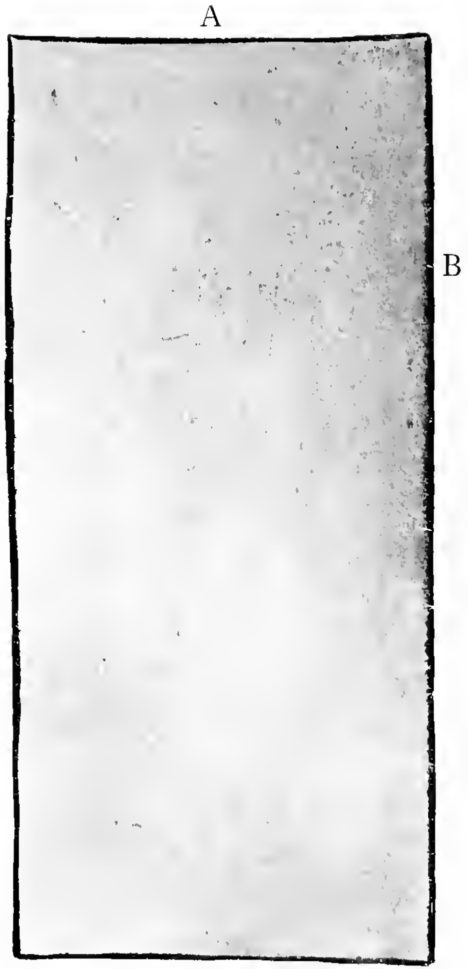
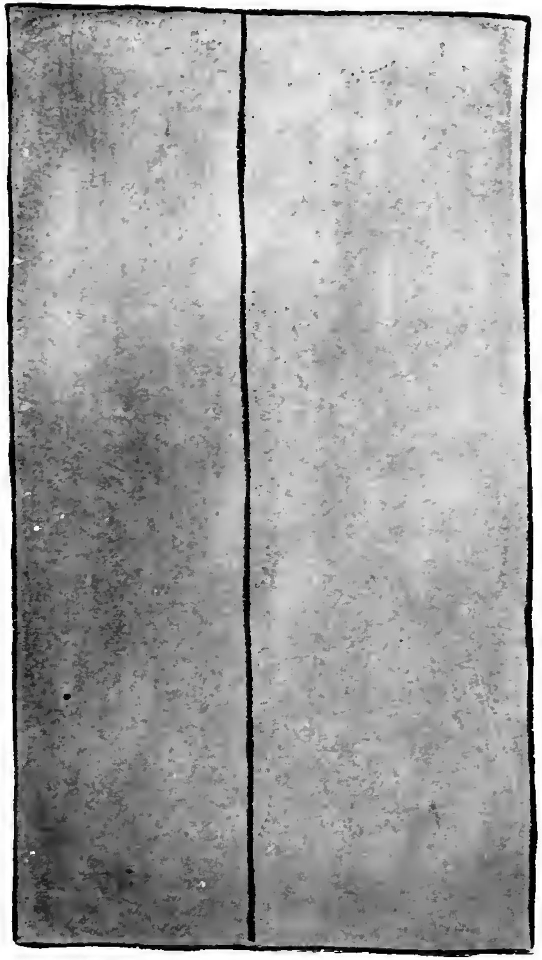
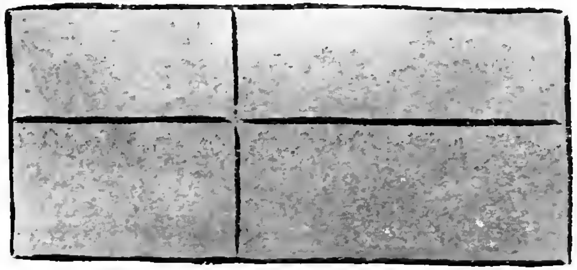


PLATE II. SPACE DIVISION

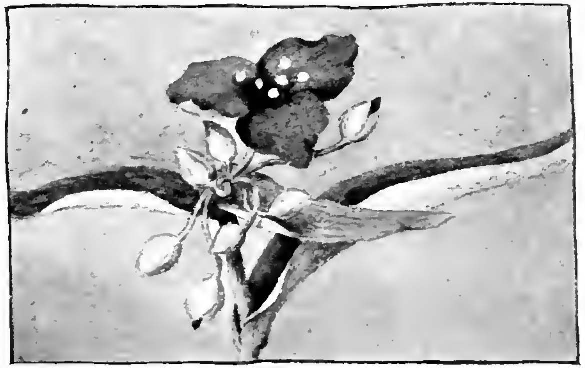
A



Always aim for subtle proportions. The area is formed as on Plate I. It is divided by a vertical line which is near the center but not in the center. The relation of the areas formed are as 2 to 3. The flower in B is placed on the line planned in A. The lines in C divide the space vertically and horizontally into proportion of 2 to 3. The drawing in D is placed on lines as planned in C.



C



D

B

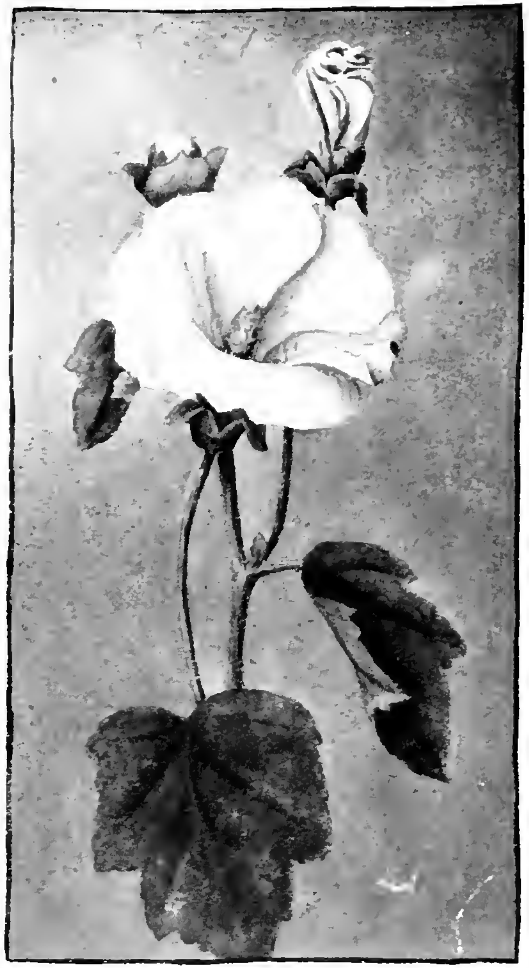
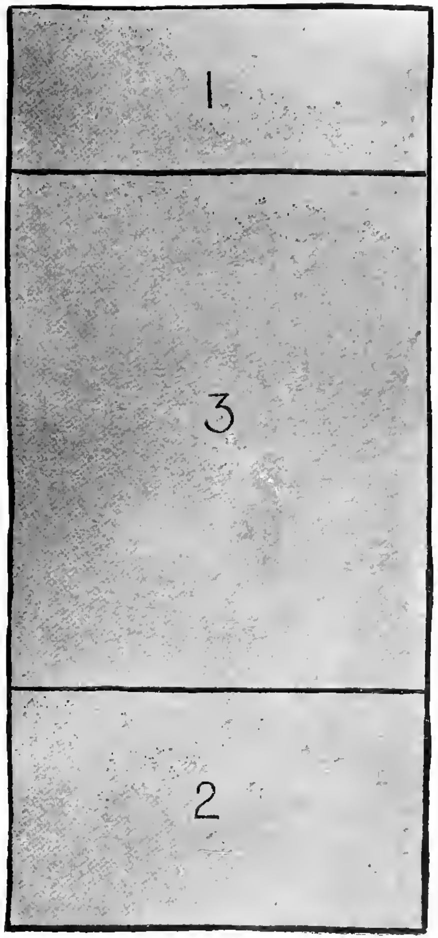


PLATE III. SPACE DIVISION

A



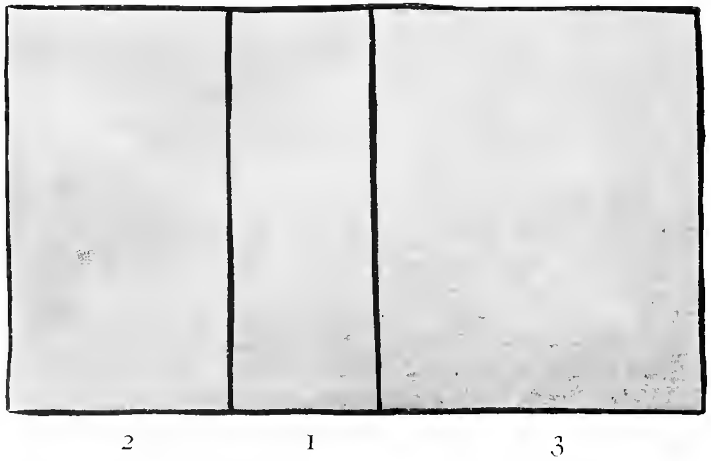
Aim for variety. In these drawings the areas read 1 for the smallest size, 2 for the next in size, etc. Areas should read 1-3-2 or 2-1-3.

Avoid regular succession of areas. They should not read 1-2-3.

Avoid a monotonous division, such as 1-1-1. The space A is divided to illustrate 1-3-2. The space B is divided to illustrate 2-1-3.

In space C the flowers are arranged to show vertical divisions of 2-1-3. The sides of the space C are cut by the flowers into subtle proportions; H is more than 1/5 and less than 1/4 of K, and F is related to E as 2 is to 3.

B



C

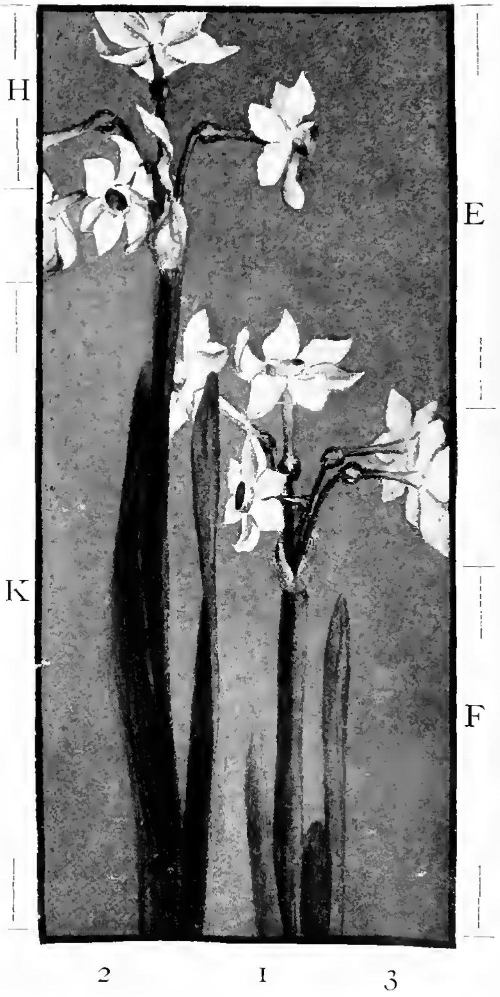


PLATE IV. SPACE DIVISION

In the first panel horizontal lines divide the space into areas that read 3-1-2. In the second panel vertical lines divide the spaces into areas that read 3-1-4-2, the horizontal lines divide the space into areas that read 1-3-2. In the third panel a vertical line divides the space into subtle proportions, and horizontal lines divide it into areas that read 2-3-1. In the second panel the width of the trees reads (2)-(1)-(3).

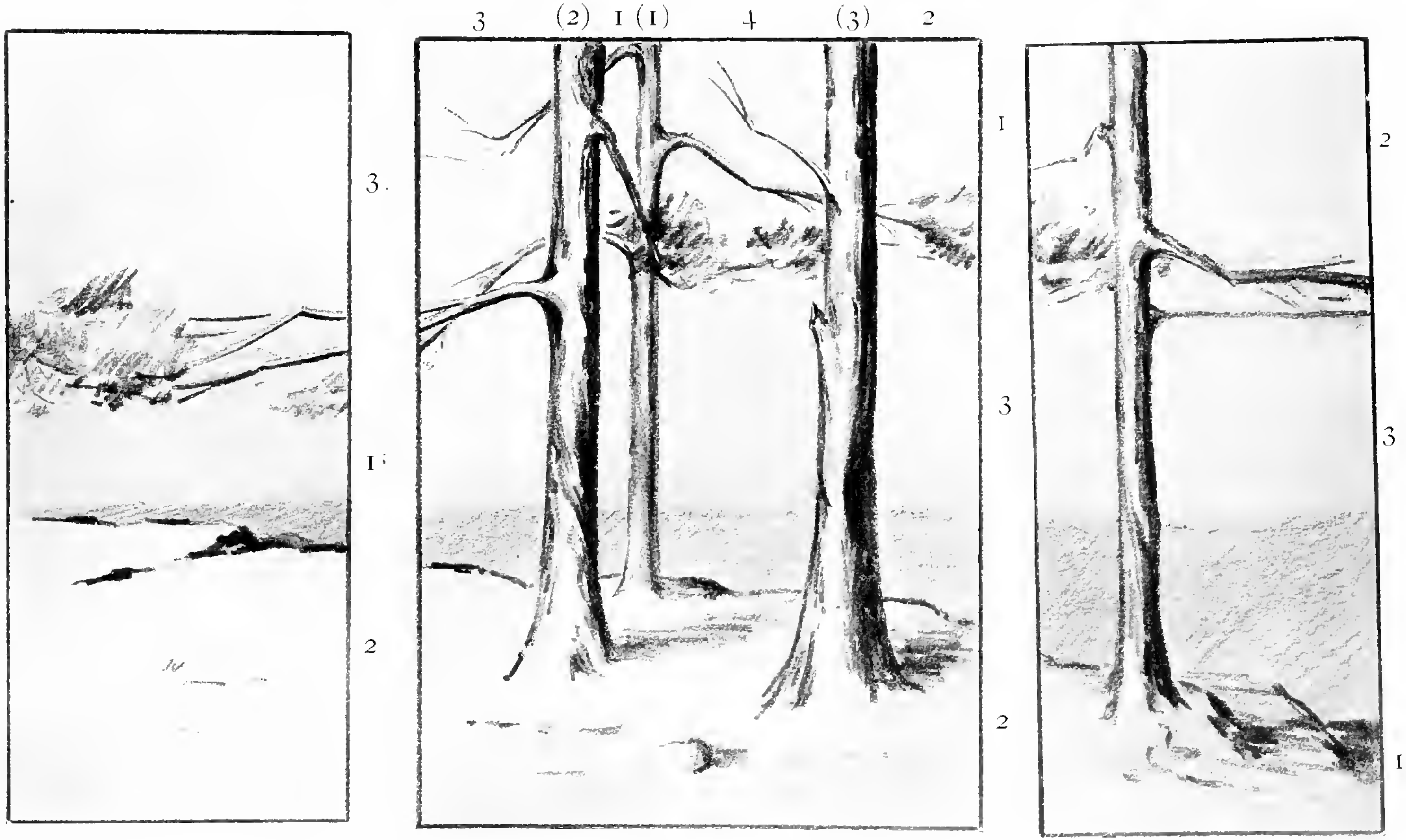
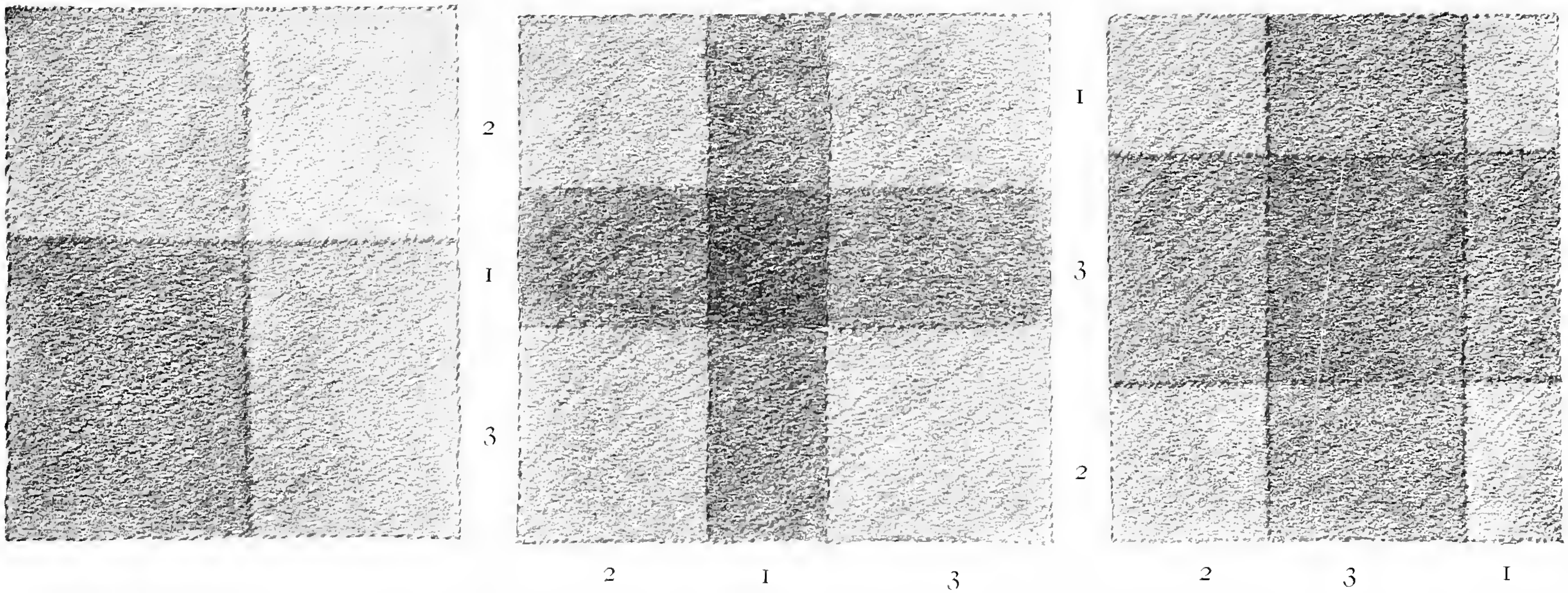
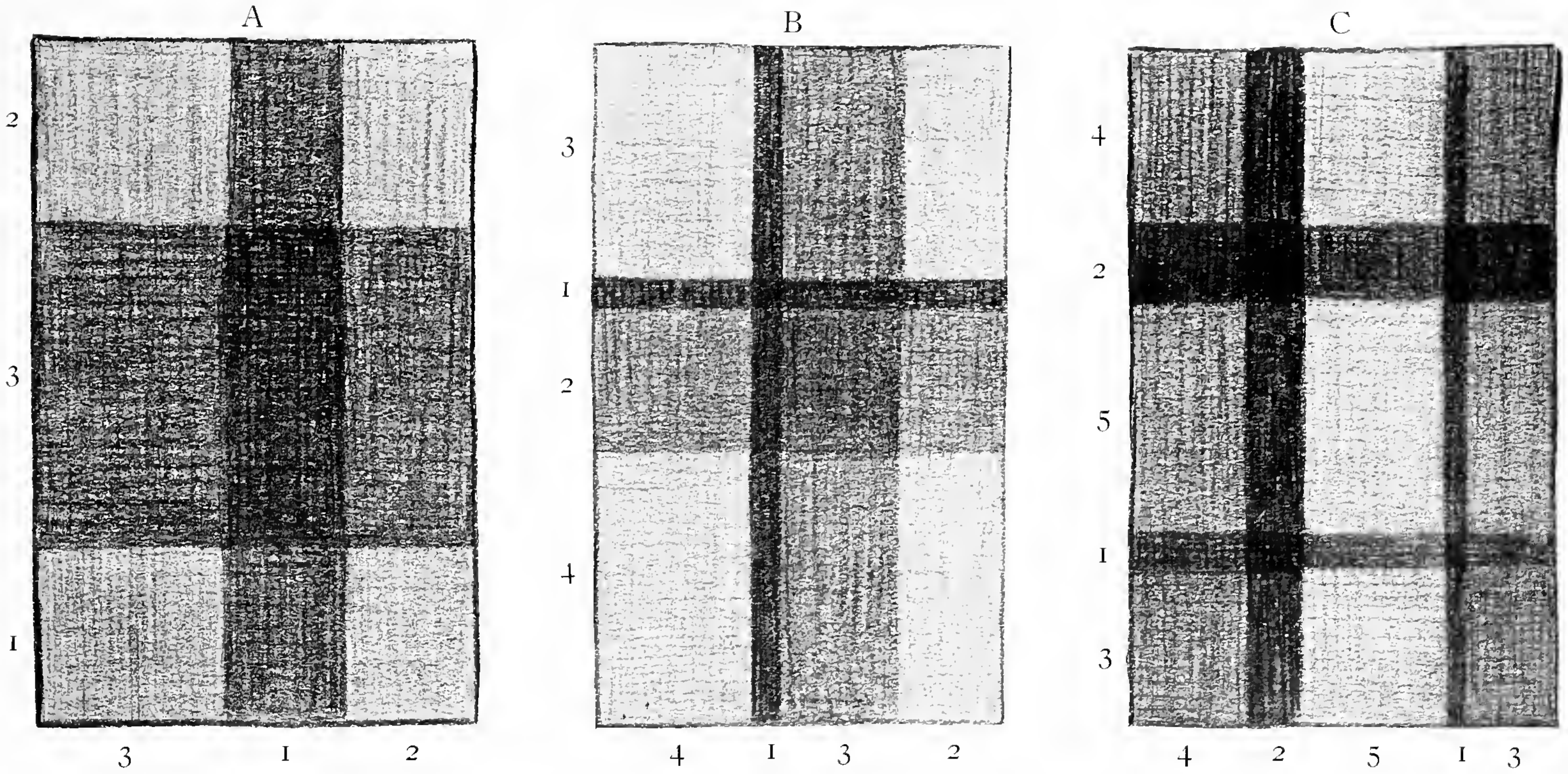


PLATE V. PLAIDS



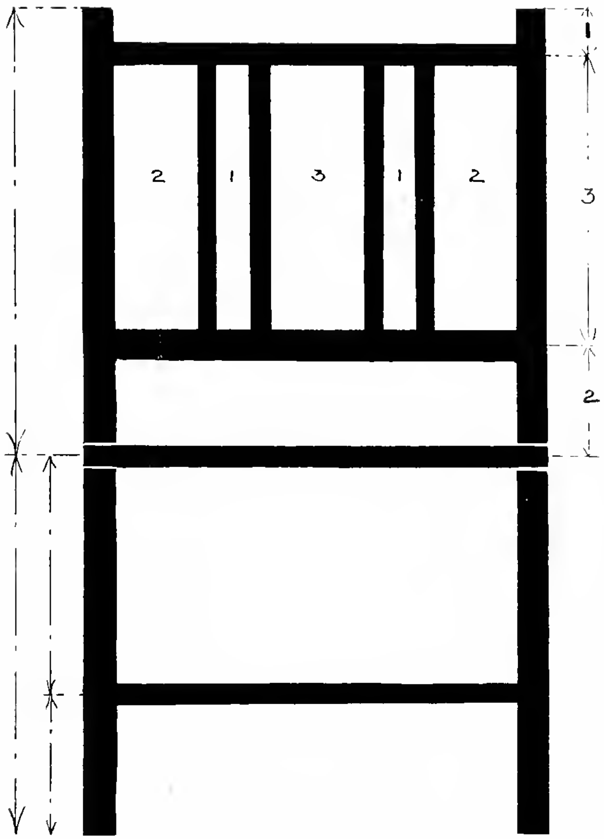
Aim for the subtle proportions of areas and avoid extreme comparisons. The lines of division in the first plaid are placed near the center but not in the center. Aim for variety of areas sustaining subtle proportions to each other. The areas are numbered 1 for the smallest, 2 for the next in size, etc., and should read 2-1-3 or 2-3-1, avoiding regular numerical succession as 1-2-3.

PLATE VI. PLAIDS



Aim for variety of well-proportioned areas, keeping the most interesting areas toward the center of the plaid. Avoid the placing of small areas along the edges of the enclosing form, as this disposition of areas tends to attract attention to the edges and thus destroys unity. The areas in A read 2-3-1 and 3-1-2. The areas in B read 3-1-2-4 and 4-1-3-2. The areas in C read 4-2-5-1-3 and 4-2-5-1-3.

PLATE VII. A CHAIR



I. Function.

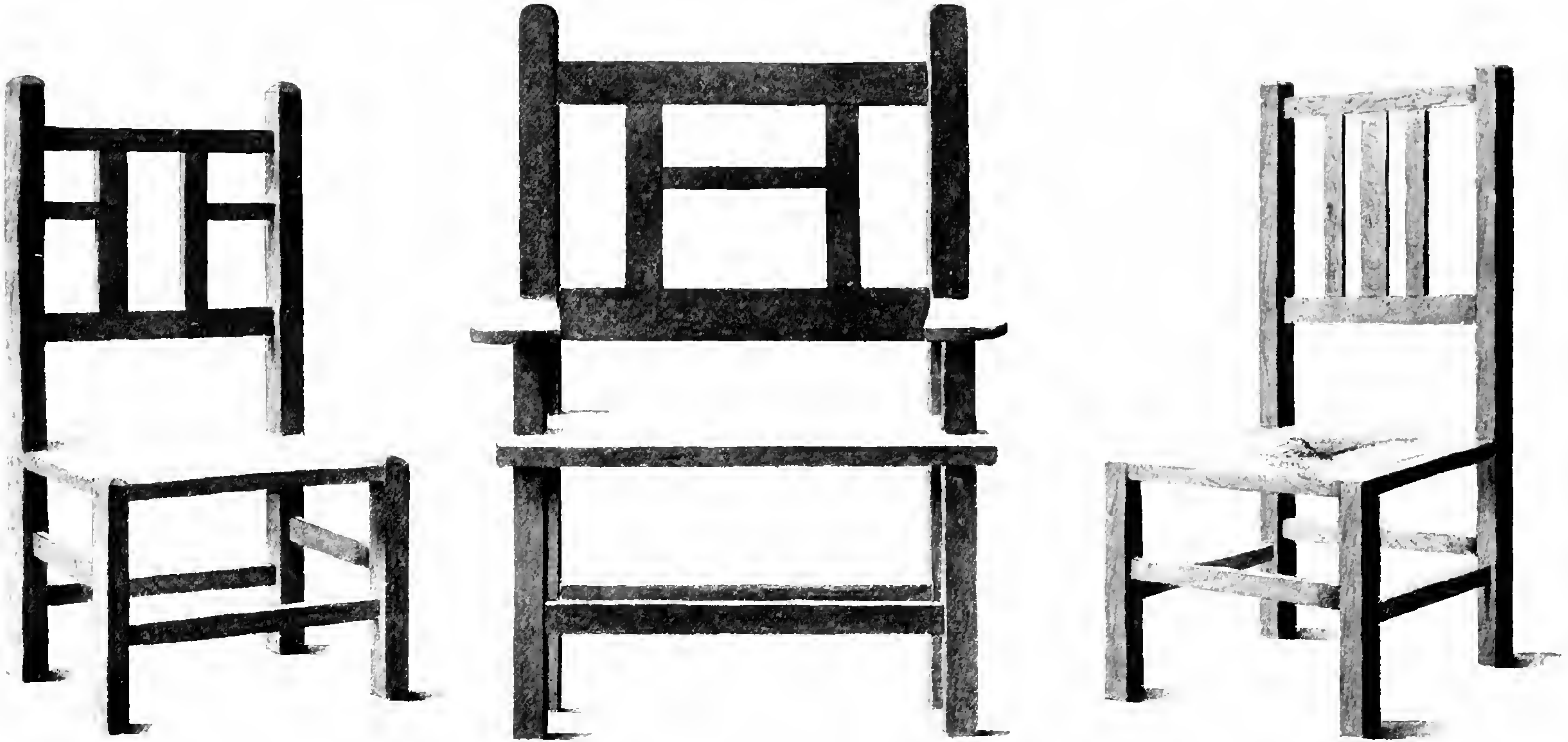
1. It must be comfortable.
2. It must be consistent with its surroundings.

II. Order of development.

1. Space divided for the location of the seat. Aim for subtle proportions, considering the height of the chair.
2. Space divided for location of rungs. Aim for subtle proportions, considering the space below the seat.
3. Space divided for the chair back. Aim for strength and enrichment.

Emphasize lines of construction and aim for variety of areas. Areas should read 1-3-2 on the vertical divisions and 2-1-3 on the horizontal divisions.

PLATE VIII. CHAIRS



This is a development of the lesson on Plate VII. Note the proportions of each chair as a whole. Note the spacing in the backs of the chairs and the spacing of the rungs. This is a problem in constructive design, involving the study of proportions, structure and material.

PLATE IX. EXAMPLES OF SPACE DIVISION

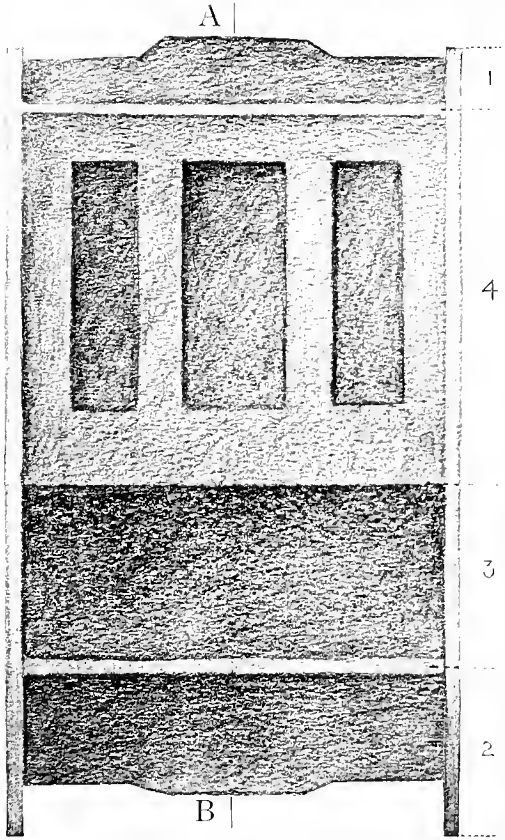


FIG. 1

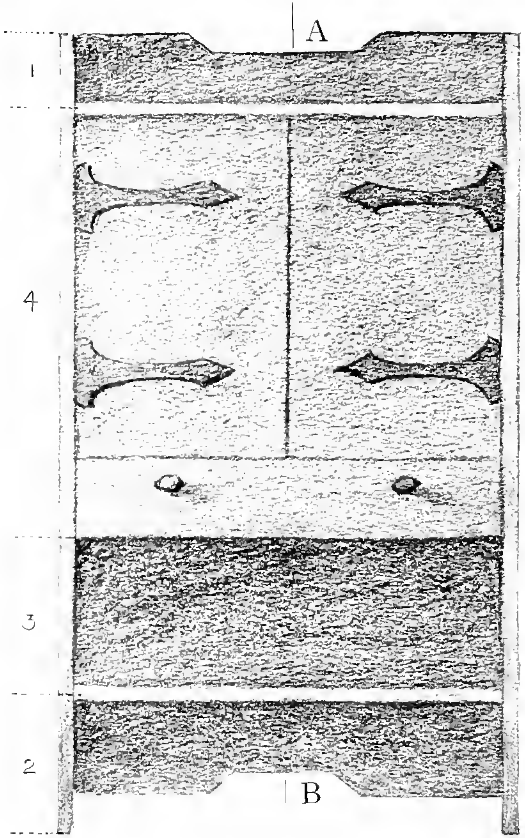
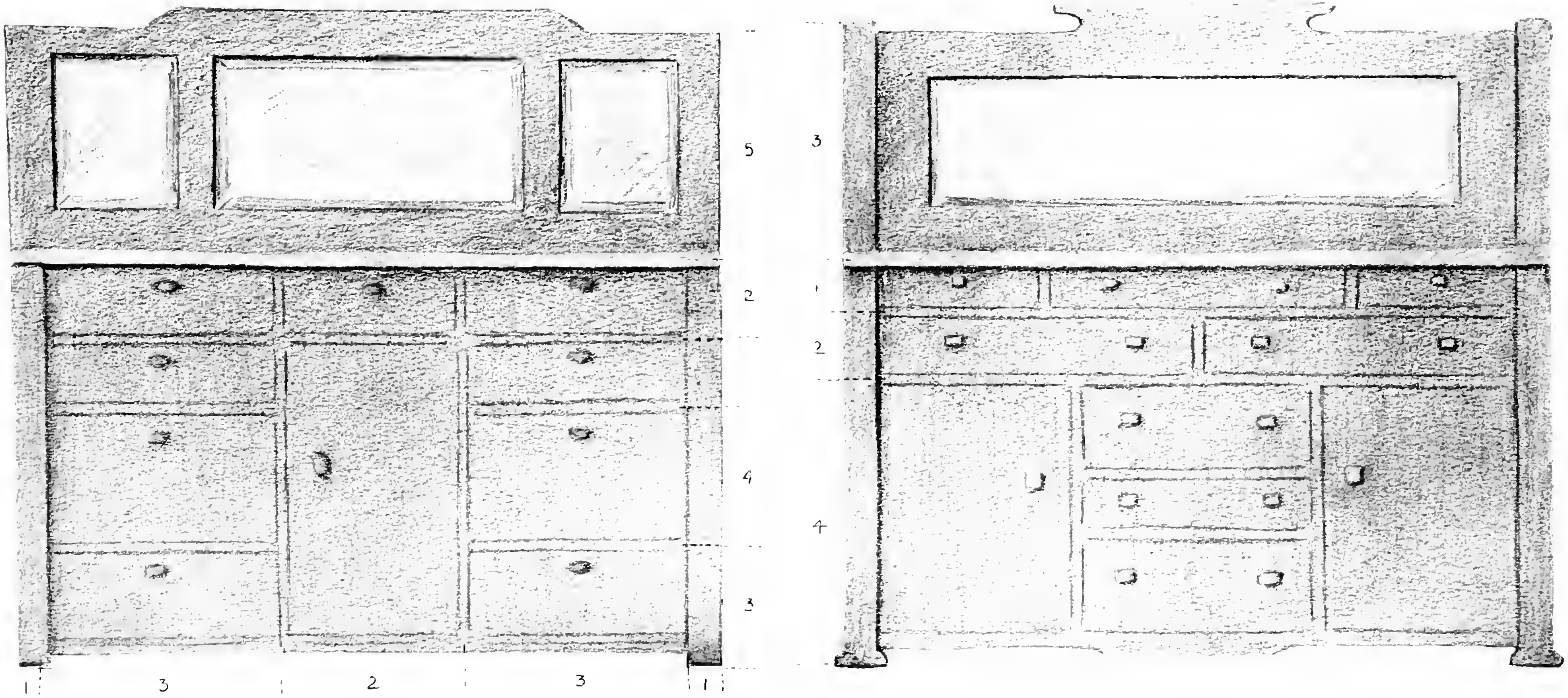


FIG. 2

Construction demands that objects be static, and so in planning a desk we begin with the vertical axis AB, which divides the design into two similar parts. The panels in Fig. 1 are proportioned as 2 is to 3, and the areas as spaced by the horizontal lines read 1-4-3-2. Any decoration must follow the lines of construction as the panels and hinges do in these examples.

PLATE X. EXAMPLES OF SPACE DIVISION



First establish the proportion of the whole as a rectangle (see Plate II). Then draw the line of the shelf as a line of division (see Plate III). Draw the vertical axis. Consider the function of a sideboard and plan the drawers in well-proportioned areas. The mirror offers a good opportunity to divide space and gain interest.

PLATE XI. SPACE DIVISION AS ILLUSTRATED BY ARCHITECTURE

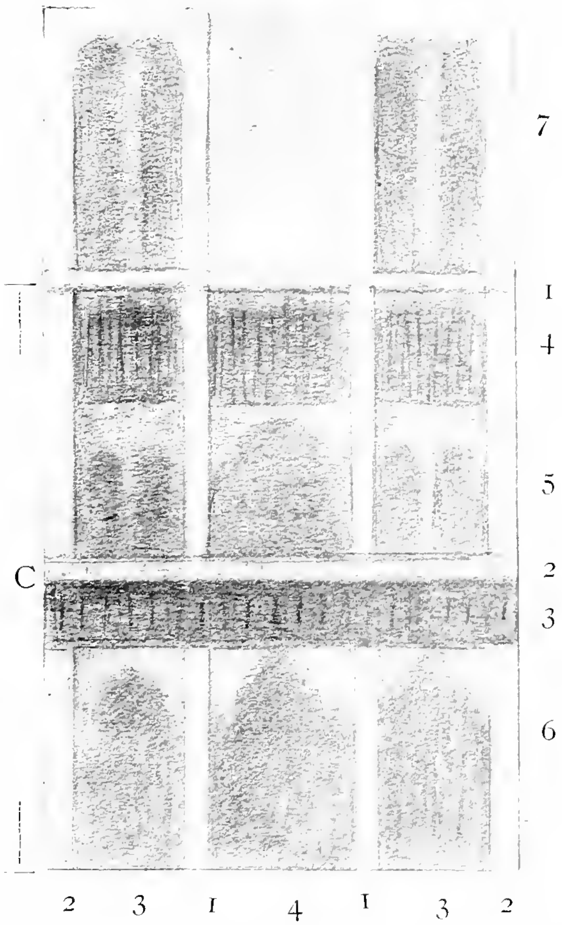


FIG. A

Fig. A is a plan that shows how the light and dark areas of Notre Dame Cathedral bring out beautiful spacing. Fig. B is a sketch showing more detail of the architecture. The height of the Cathedral itself from the ground to the balustrade, called area C in the plan, is divided by the horizontal areas 2 and 3 into the subtle proportion of 2 to 3. These areas, 2 and 3, by their contrast add a note of emphasis to the large doorways. Area 2 is the balustrade projecting from the building, and making a contrast with the deeper note of the frieze of figures below.

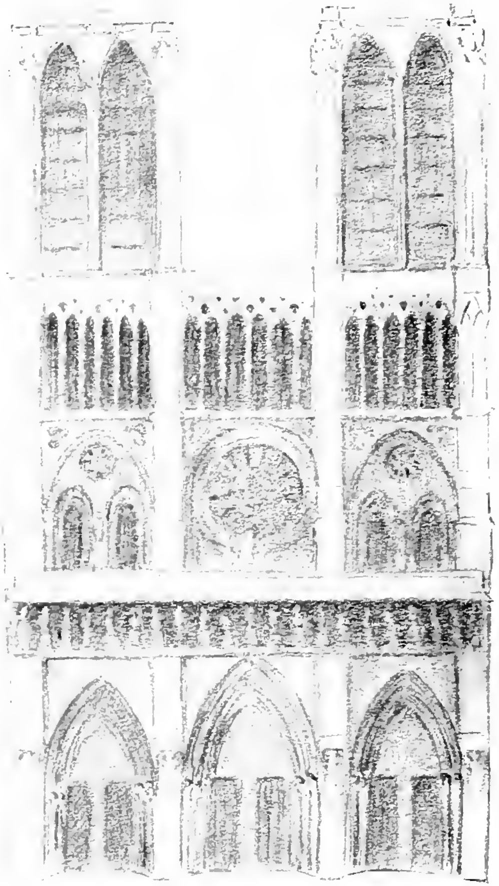


FIG. B

PLATE XII. SPACE DIVISION AS ILLUSTRATED BY ARCHITECTURE

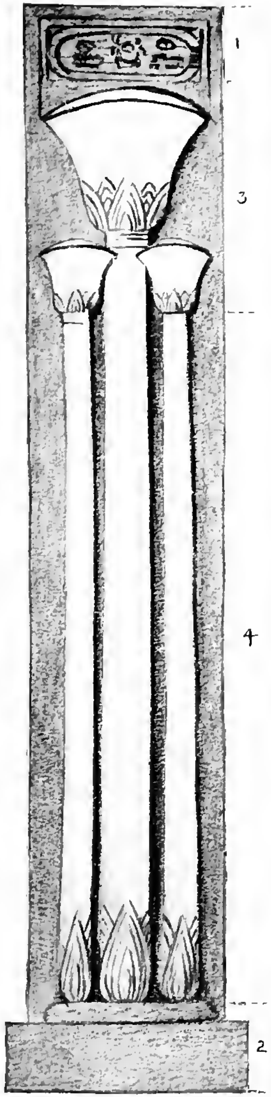


FIG. B

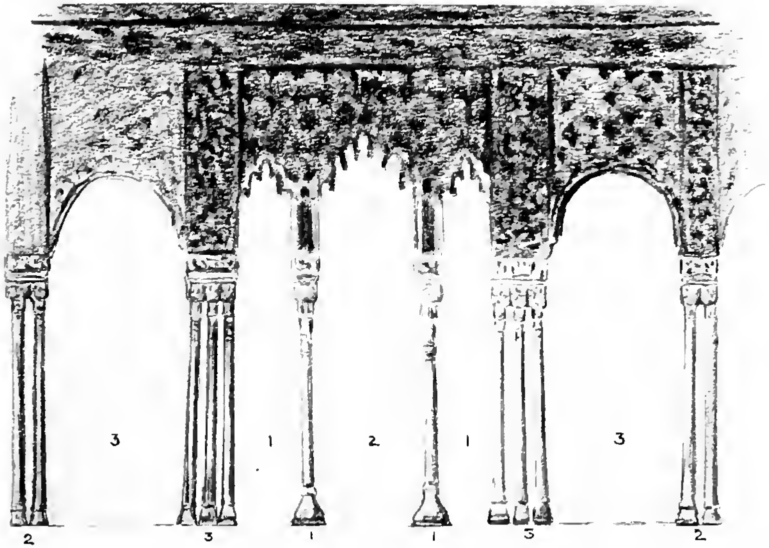


FIG. A

Fig. A—This is a detail from the Palace of the Alhambra. Notice that the grouping of the columns and the width of the archways, as indicated by the numbers in the drawing, give variety of areas.

Fig. B—These are the Egyptian pillars of Thotmes III at Karnac.

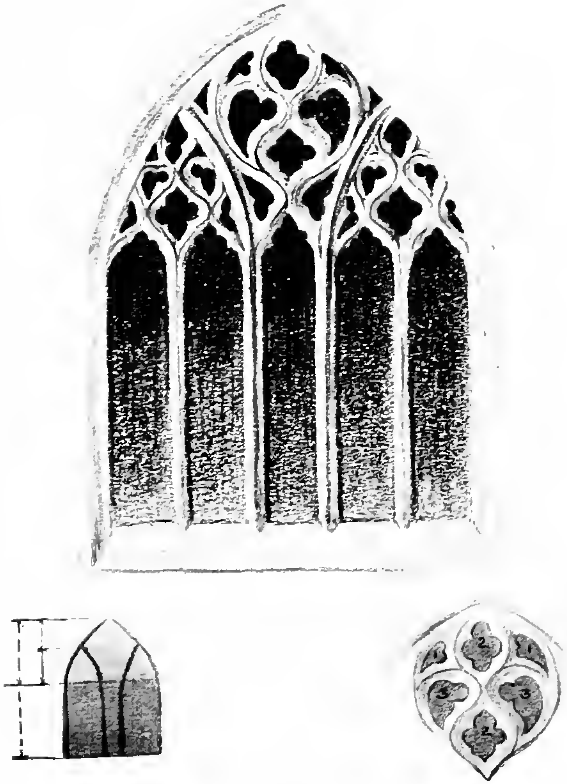


FIG. C

Fig. C—This is a Gothic window. Observe the interrelation of the openings at the upper part of the window.

PLATE XIII. DIVIDING CIRCLES INTO AREAS OF SUBTLE PROPORTIONS

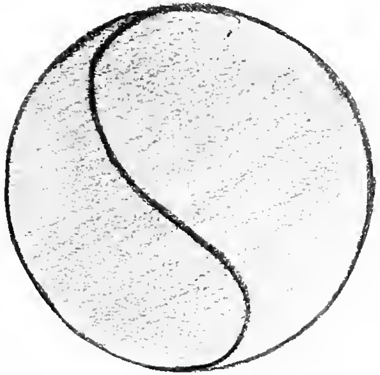


FIG. A

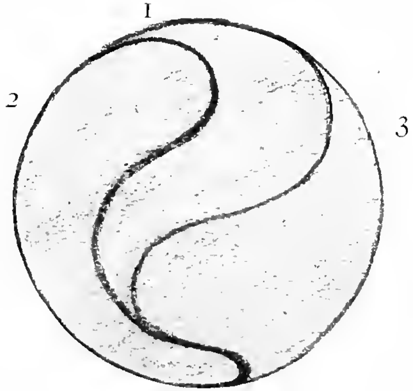


FIG. B

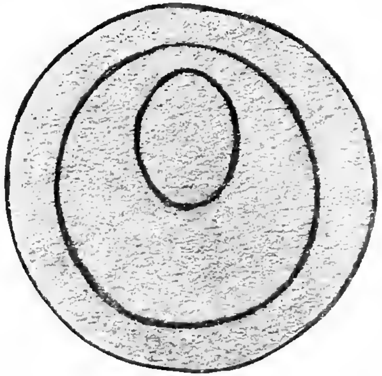
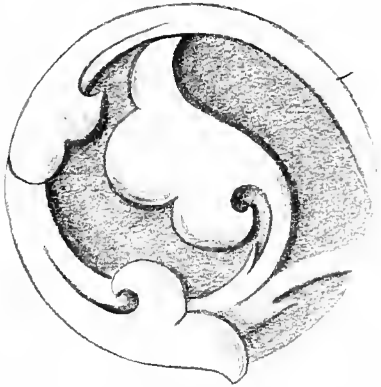
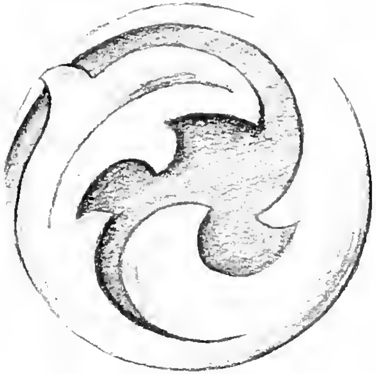


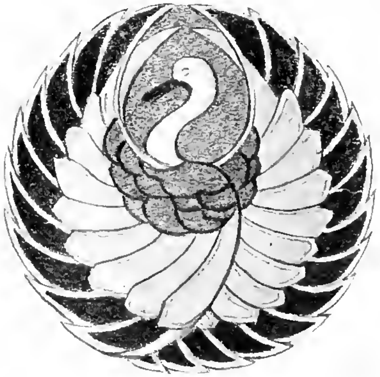
FIG. C



GOTHIC



RENAISSANCE



JAPANESE

The lines of division of circles must swing with the line of circumference. In a circle, as in a rectangle, the divisions should sustain a relationship of 2 to 3, and where the divisions are more than two they should read 1-3-2 or 2-1-3.

The Gothic ornament illustrates the space division shown in Fig. A. The Renaissance ornament illustrates the space division shown in Fig. B. The Japanese ornament illustrates the space division shown in Fig. C.

PLATE XIV. DIVIDING CIRCLES INTO AREAS OF SUBTLE PROPORTIONS

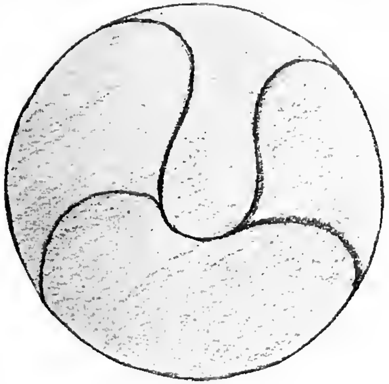


FIG. A

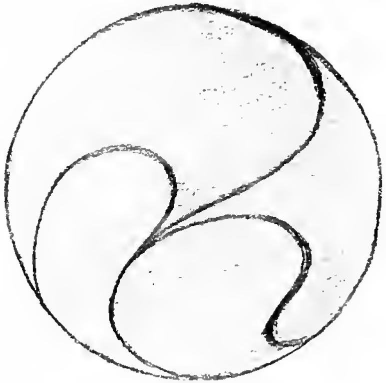


FIG. B

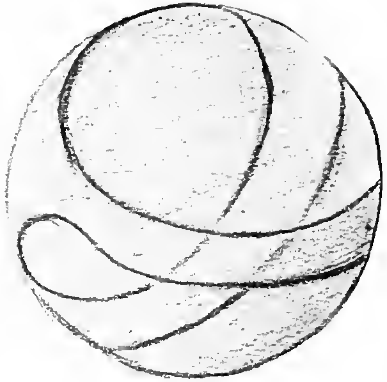
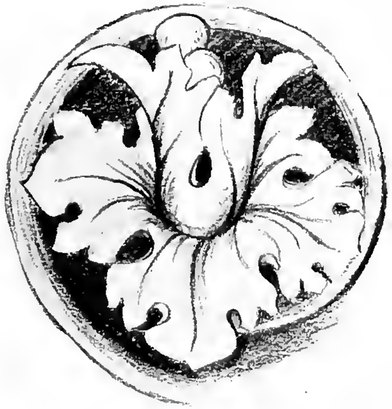
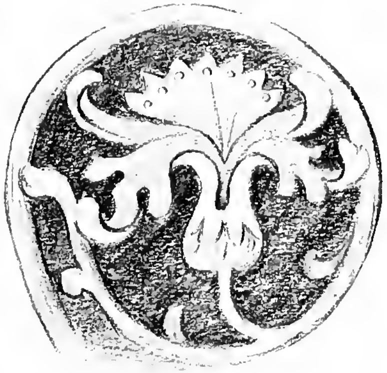
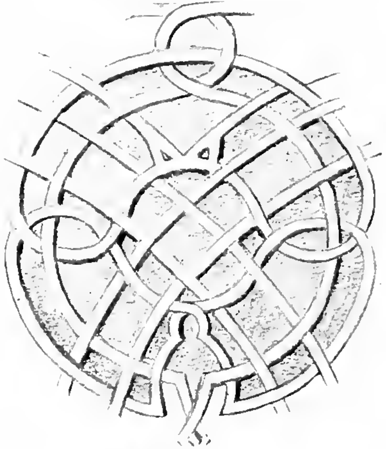


FIG. C


ROMAN


GOTHIC


SARACENIC

The lines of division in the three examples given in Figs. A, B and C divide the circle into related areas. They are related in their movement to each other and to the circumference. They are consistent. Note how the lines at the point of crossing catch and hold the attention, thus establishing a point of interest in the design. The Roman unit illustrates the space division shown in Fig. A. The Gothic unit illustrates the space division shown in Fig. B. The Saracenic unit illustrates the space division shown in Fig. C.

PLATE XV. SPACE DIVISION

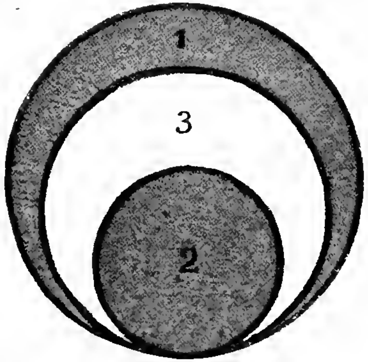


FIG. A

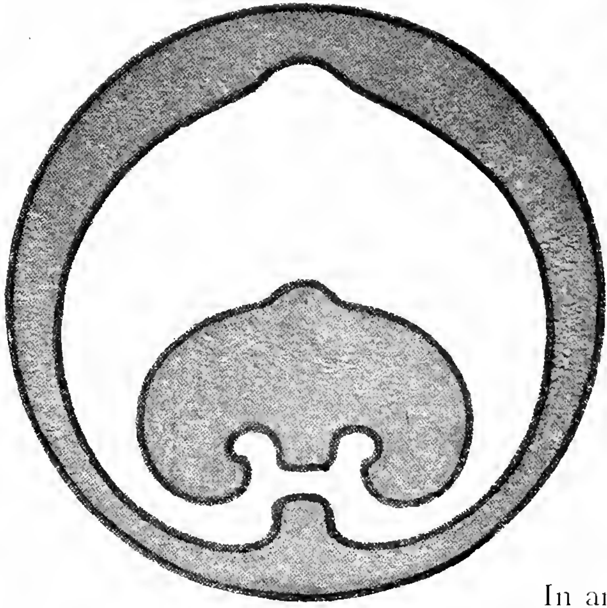


FIG. B

In arranging well-proportioned areas the lines must swing with the enclosing form.

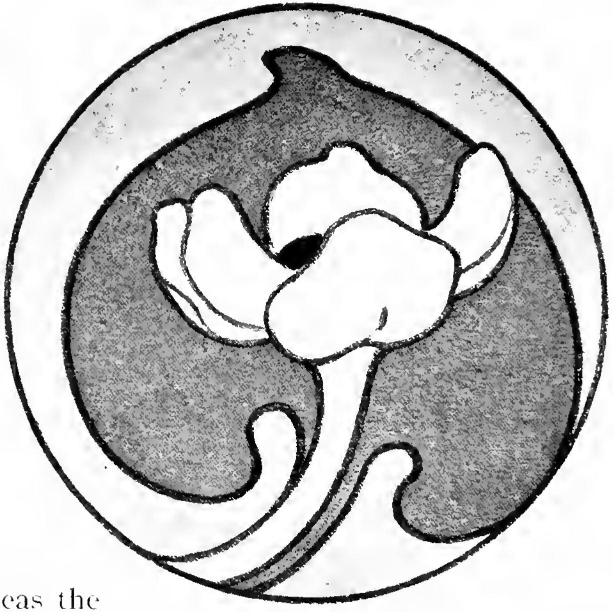
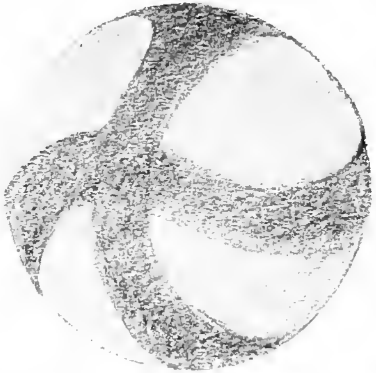
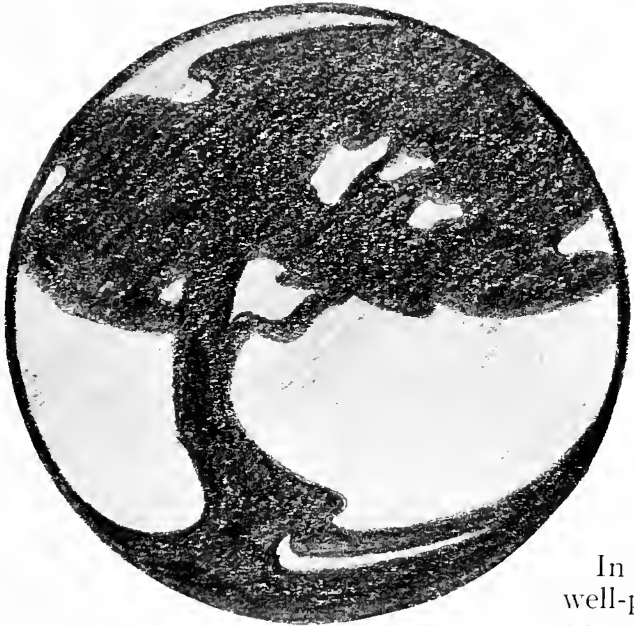


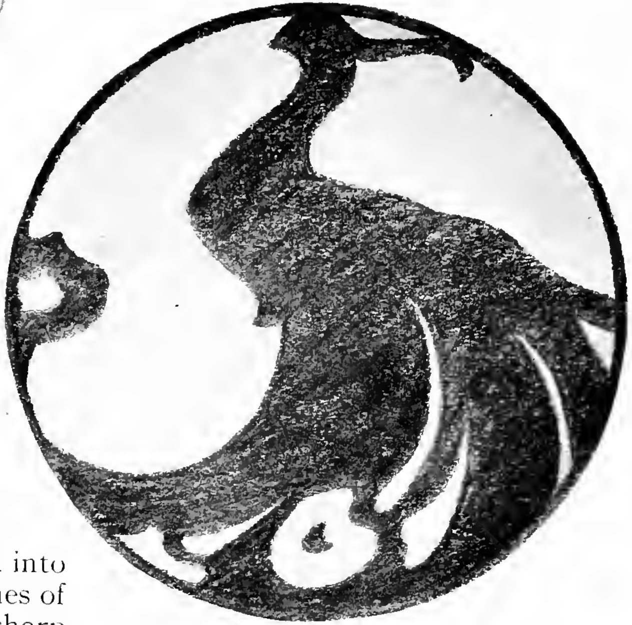
FIG. C

In Fig. A the tangent circles are arranged so that the areas read 2-3-1. This forms the basis for the drawing B. In Fig. C the concentric circles give well-proportioned areas on the lines planned in Fig. C on Plate XIV.

PLATE XVI. SPACE DIVISION







In breaking an enclosing form into well-proportioned areas with lines of opposition, avoid forming a sharp angle, which would attract too much attention and thus detract from the flow of line and effect of the design as a whole. The area of the background must sustain a subtle proportion to the area of the motif.

PLATE XVII. SPACE DIVISION ON THE LINE OF RADIATION

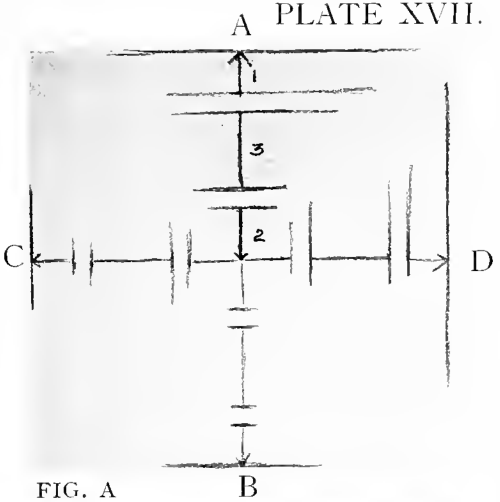


FIG. A

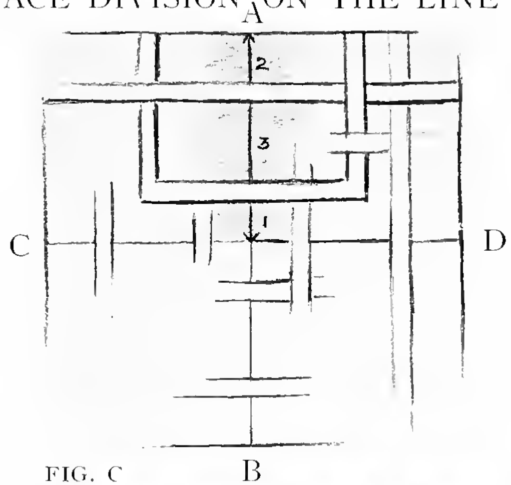


FIG. C

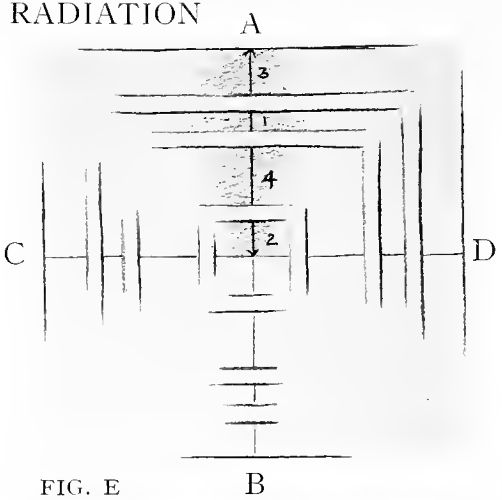


FIG. E

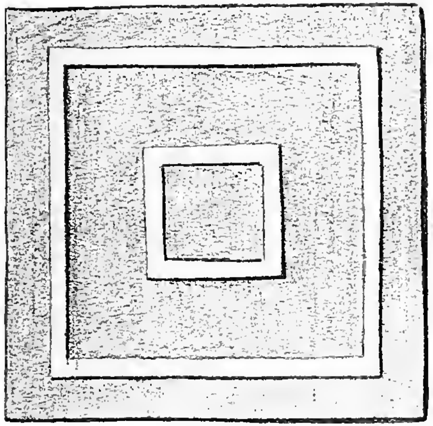


FIG. B

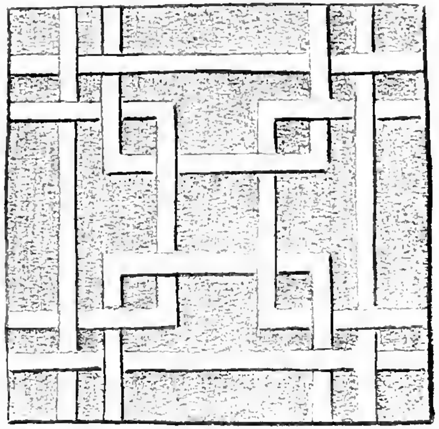


FIG. D

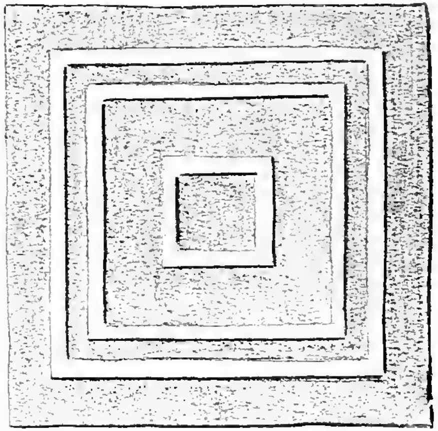


FIG. F

The lines A, B, C and D radiate from the center and form lines of construction. Begin in the center and on these lines of radiation draw bands that will break the background into well-proportioned areas. In Fig. A the areas read 2-3-1. In Fig. B this space division is shown worked out. In Fig. C the areas read 1-3-2 and are worked out in detail in Fig. D. In Fig. E the areas read 2-4-1-3 and are shown worked out in Fig. F.

PLATE XVIII. SPACE DIVISION ON THE LINE OF RADIATION

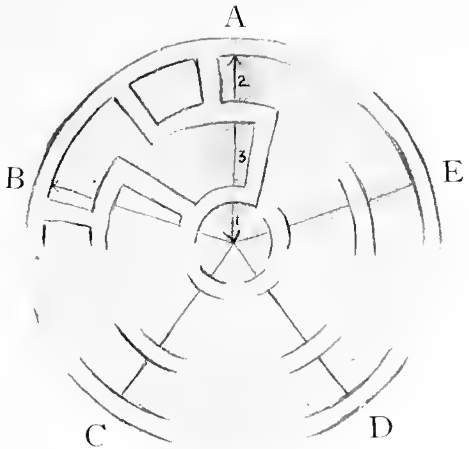


FIG. A

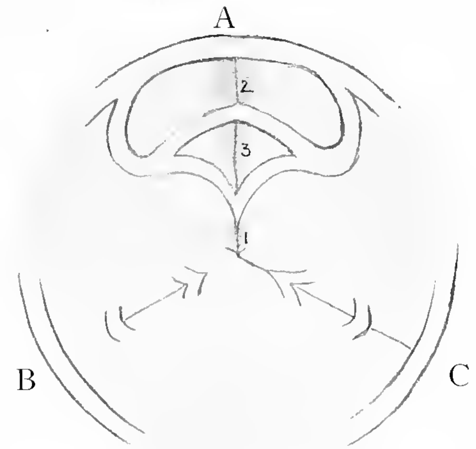


FIG. C

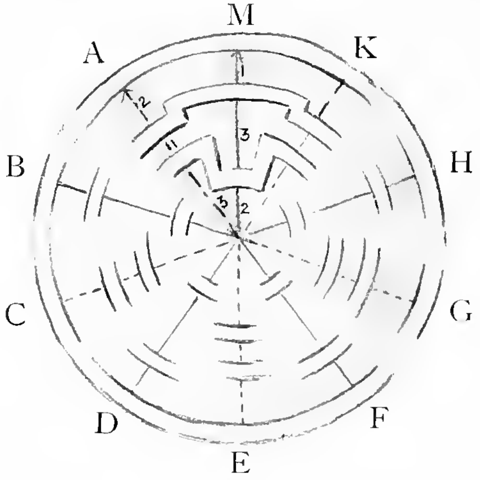


FIG. E

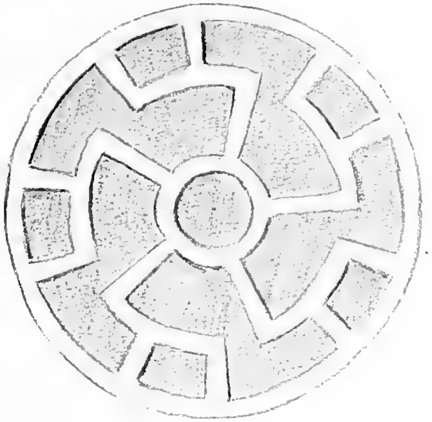


FIG. B

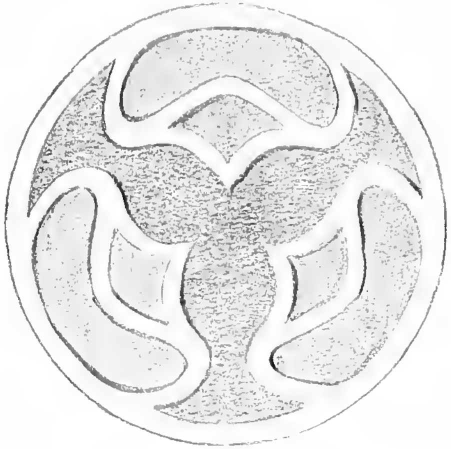


FIG. D

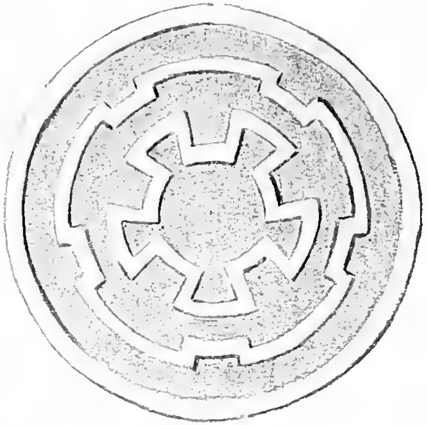
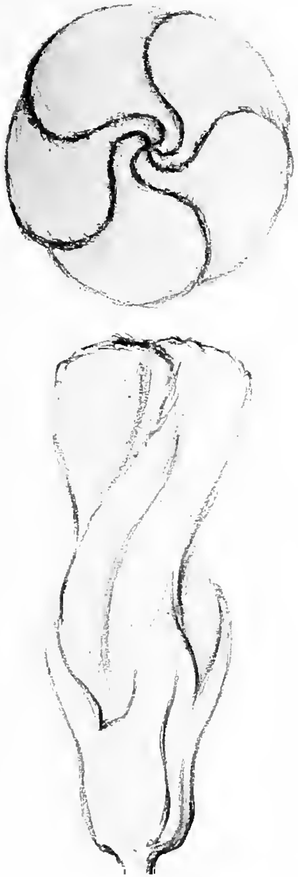
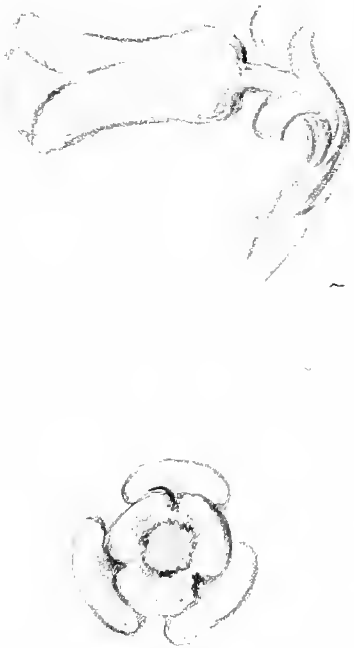


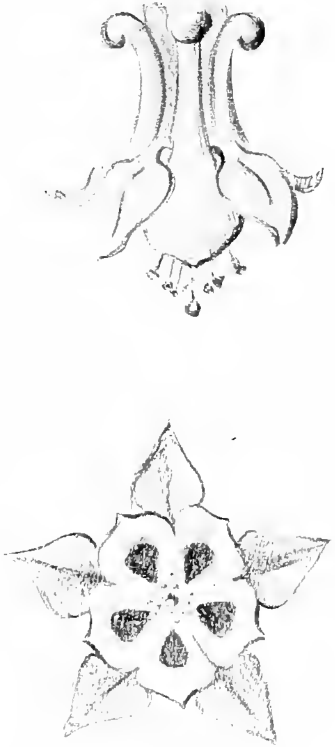
FIG. F

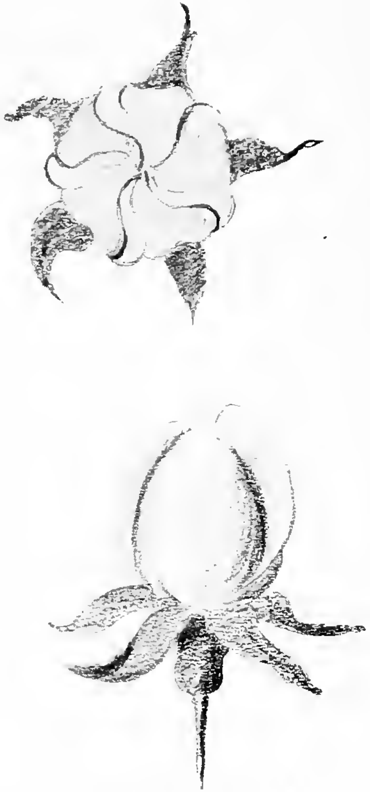
Lines A, B, C, D, E, F, G, H, K, M radiate from the center. On these lines bands may be spaced, in order to break the background into subtle areas. Fig. A is the plan for Fig. B, Fig. C is the plan for Fig. D, Fig. E is the plan for Fig. F. Note that in Fig. E alternate lines of radiation have the same spacing.

PLATE XIX. SPACE DIVISION ON THE LINE OF RADIATION ILLUSTRATED BY FLOWERS


GENTIAN

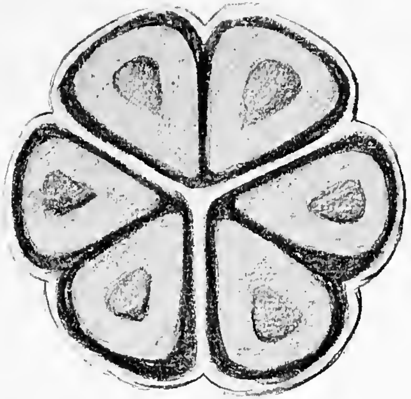

INDIAN PIPE

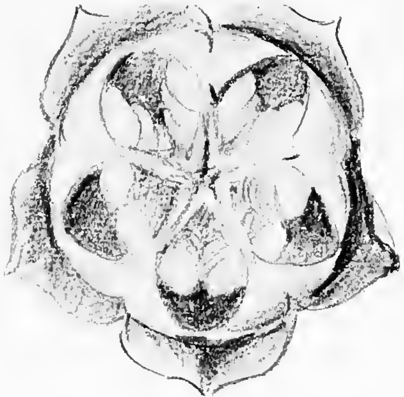

COLUMBINE

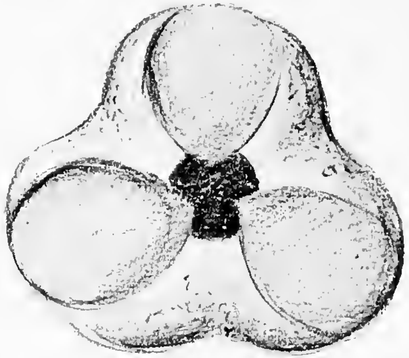

APPLE BLOSSOM

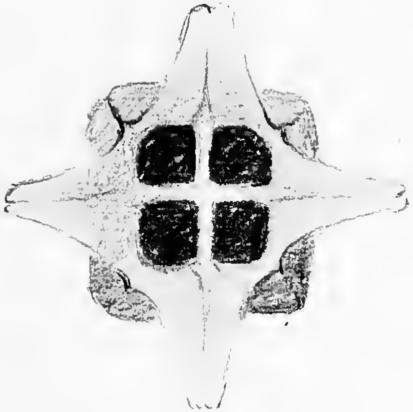
Study the movement of the lines and the proportions of areas in these flower forms for suggestions in design. Note in the top view of the gentian and the apple blossoms the movement of the compound curve as it follows the line of radiation.

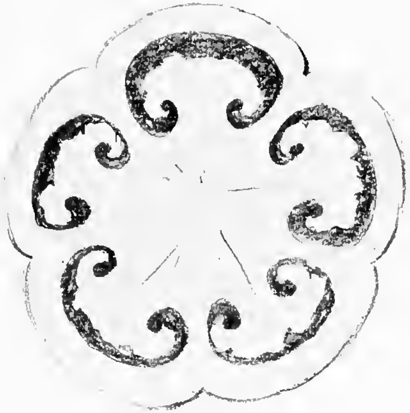
ATE XX. SPACE DIVISION ON THE LINE OF OF RADIATION ILLUSTRATED BY FRUIT FORMS

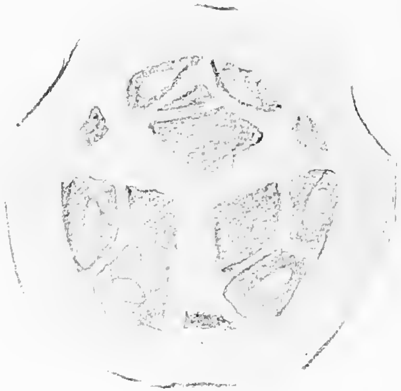

DAY LILY


AUGUST FLOWER


TEA


EVENING PRIMROSE

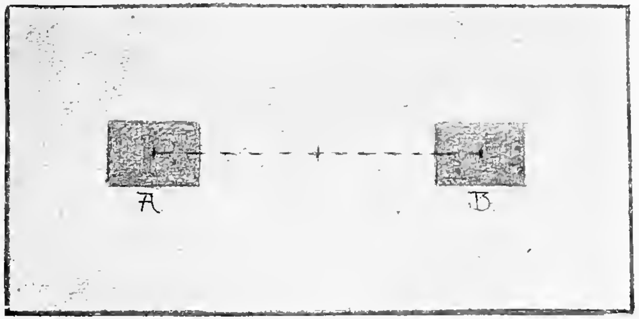

ST. JOHN'S WORT


CUCUMBER

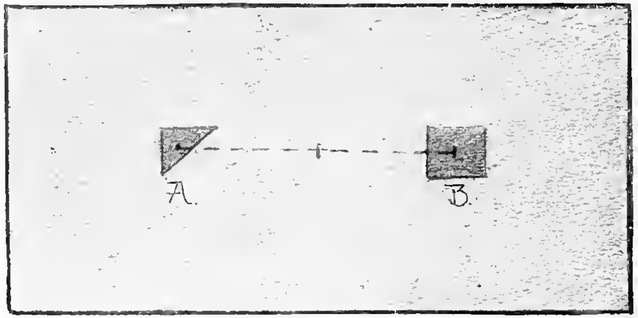
Study the shape and proportions of the areas for suggestions. In these various examples Nature plainly makes use of the principle of radiation.

PLATE XXI. BALANCE

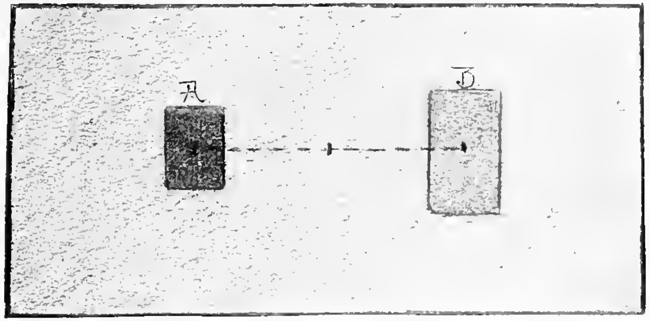
Equal attractions balance at equal distances from the center. Attraction depends on shape, area and tone.



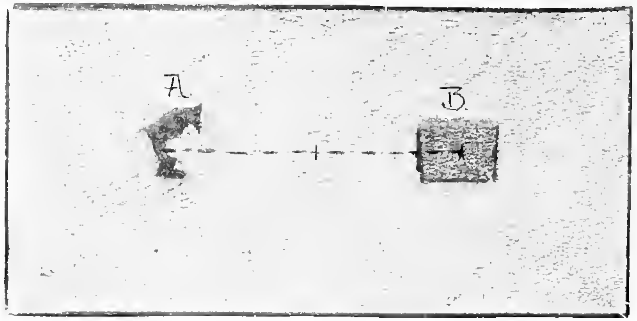
A and B are equal in shape, area and tone.



A is still equal to B, but is half the area, therefore it must hold twice the interest in shape.



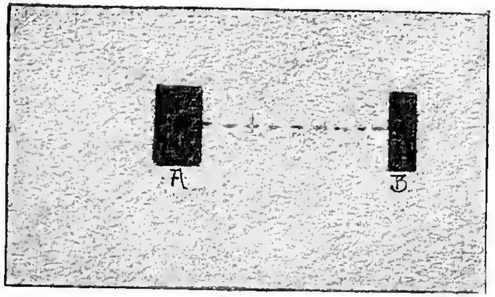
B is still equal to A, but is twice the area; therefore it must be one-half the tone.



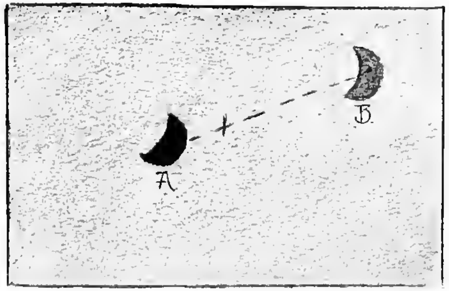
A is still equal to B, but is one-quarter the area, therefore it must hold four times the interest in shape.

PLATE XXII. BALANCE

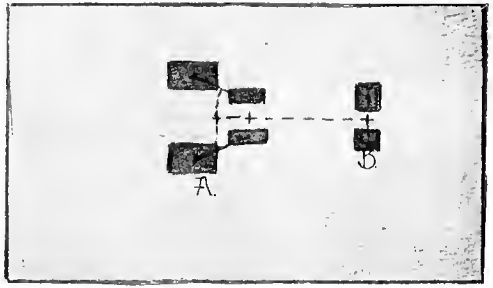
Unequal attractions balance on the center inversely as their distance.



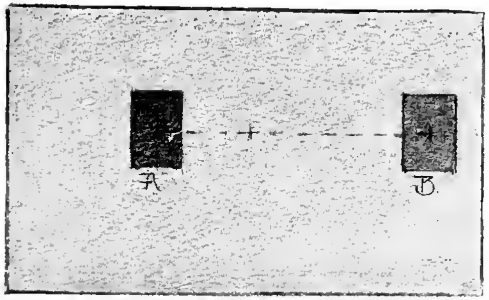
B is one-half the area of A, therefore it is twice the distance.



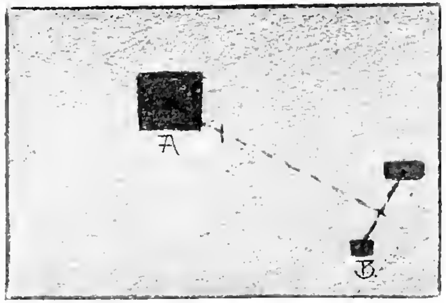
B is one-third the tone of A, therefore it is three times the distance.



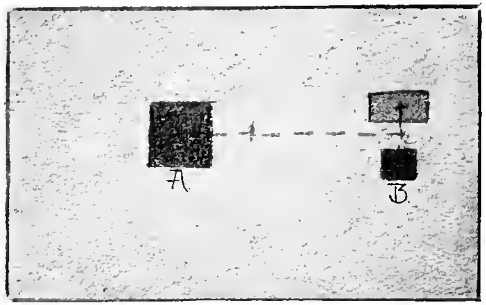
B is one-quarter the area of A, therefore it is four times the distance.



B is one-half the tone of A, therefore it is twice the distance.

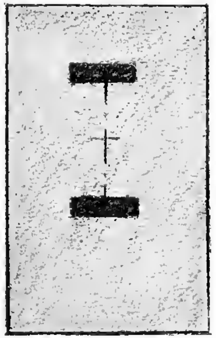


B is one-third the area of A, therefore it is three times the distance.

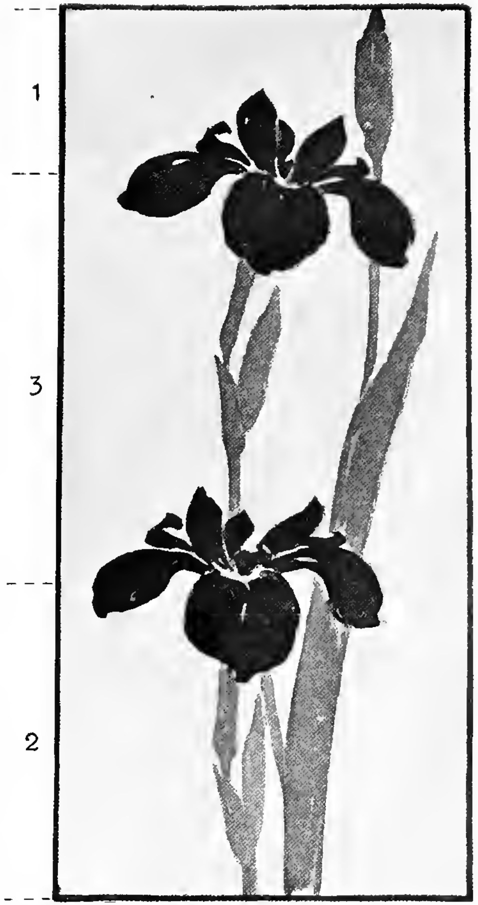


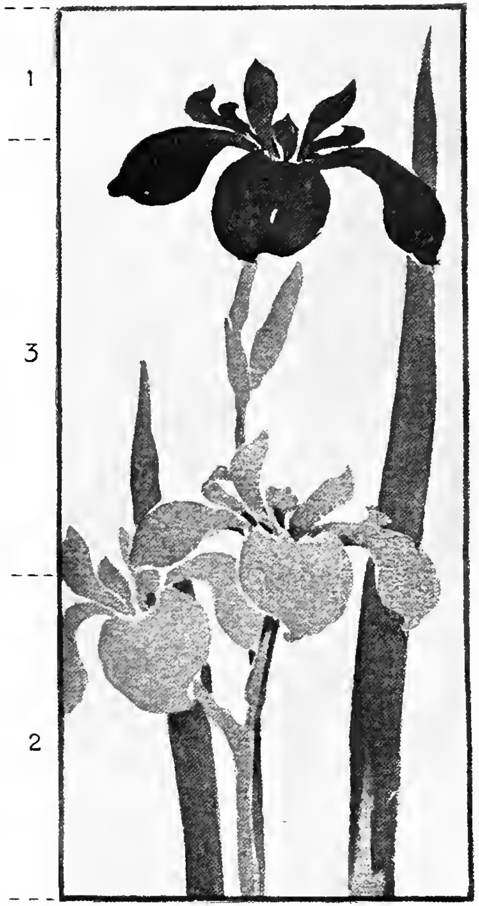
B is one-quarter the area and one-quarter the tone of A and equals one-half the attraction, therefore it is twice the distance.

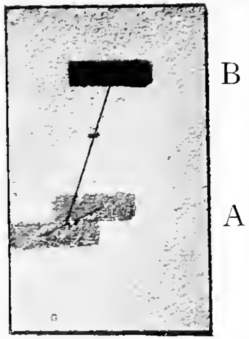
PLATE XXIII. PICTORIAL COMPOSITION



These attractions are equal in shape, area and tone.



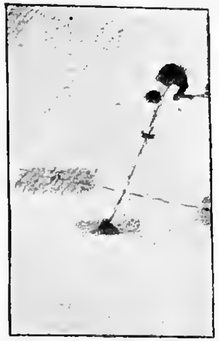




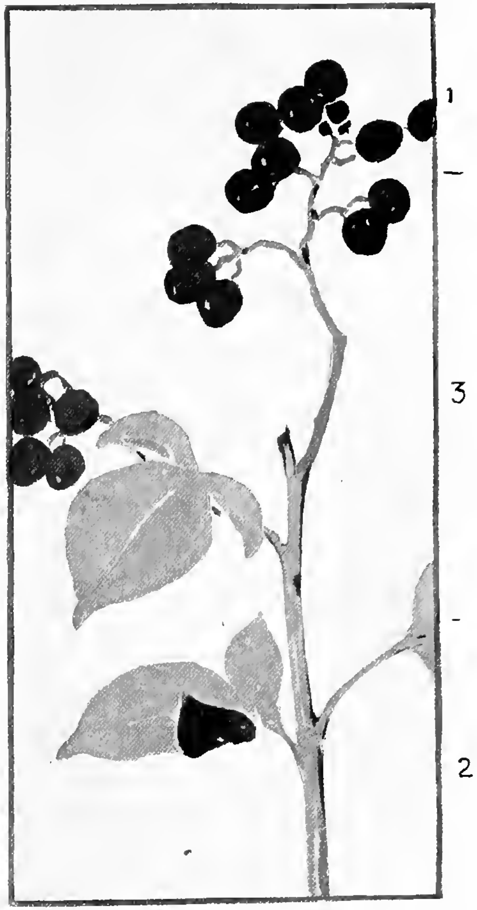
These attractions are equal in shape, but A is only one-half the tone of B, therefore A is twice the area of B.

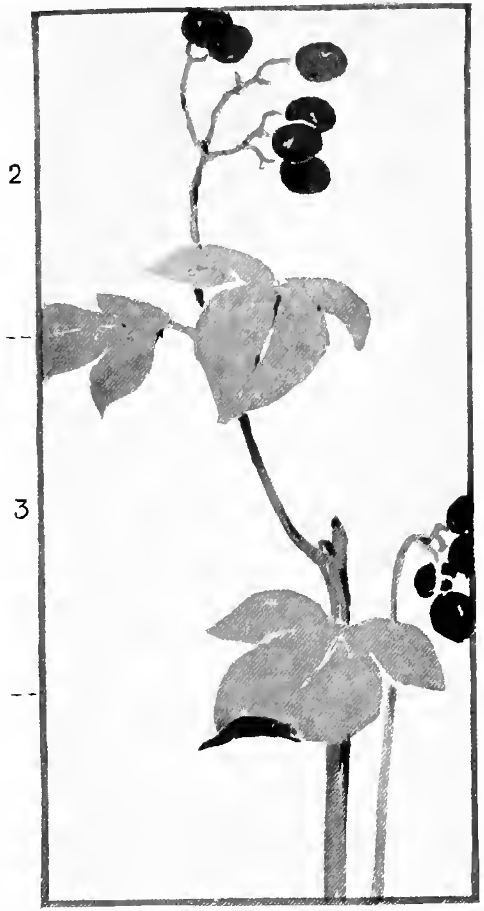
In pictorial composition background areas are of vital importance, and must be as carefully considered as the units themselves.

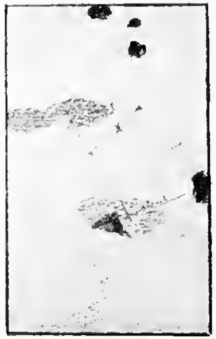
PLATE XXIV. PICTORIAL COMPOSITION



These attractions are unequal. The small area is eccentric in shape and intense in tone. It is balanced by neutral tones in a variety of shapes and twice the area.







These attractions show interest increased by variety. The eccentric tones are balanced. The neutral tones are also balanced.

This lesson illustrates principles shown on Plate XXII.

PLATE XXV. DECORATIVE COMPOSITION

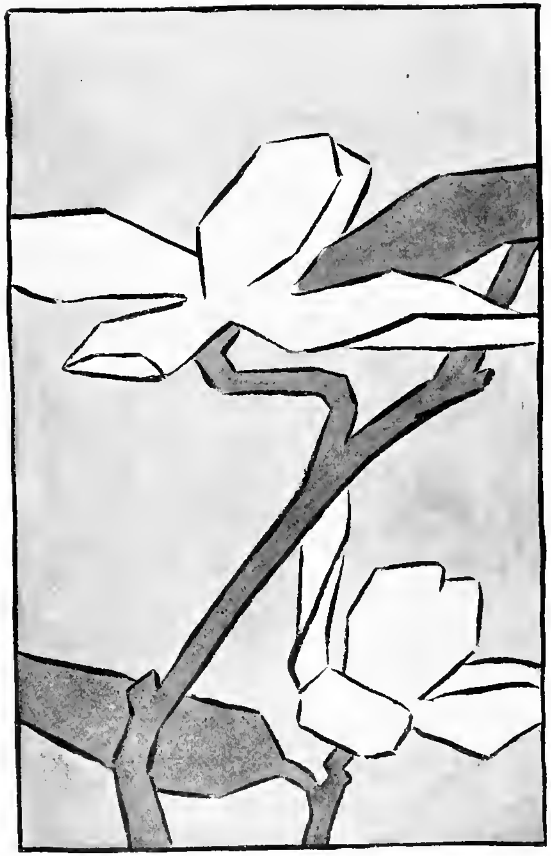


FIG. A

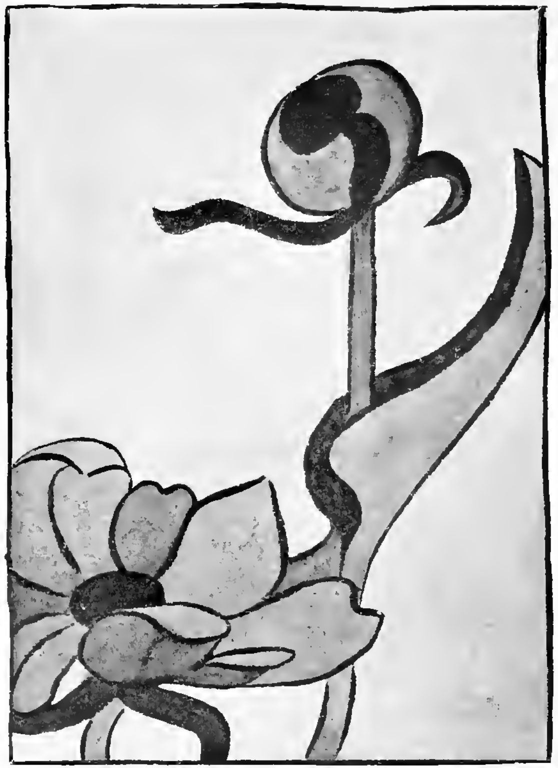


FIG. B

Eliminate the realistic element by using a decorative line to outline the plant form and a flat tone or wash on the areas. In Fig. A the upper flower is a trifle more interesting, and in Fig. B the bud is a trifle more interesting, in order to hold the point of balance just above the exact center of the enclosing form.

PLATE XXVI. DECORATIVE COMPOSITION

In decorative compositions based on plant forms characteristic growth should be retained.

Fig. A is an example of the balancing of unequal attractions. Because of the greater intensity in color and interest the shapes of the berries balance the larger areas of the leaves.

In Fig. B the greater area of the apple shape is balanced against the smaller but more intense areas of the leaf shapes.

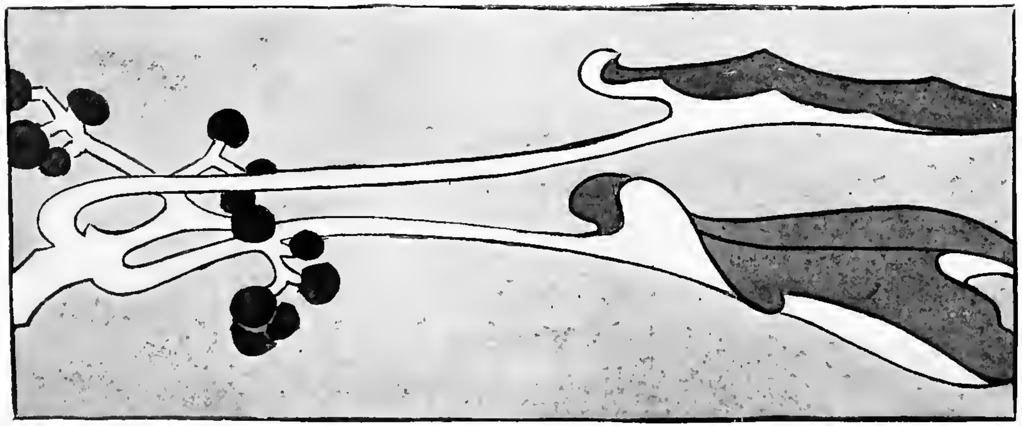


FIG. A

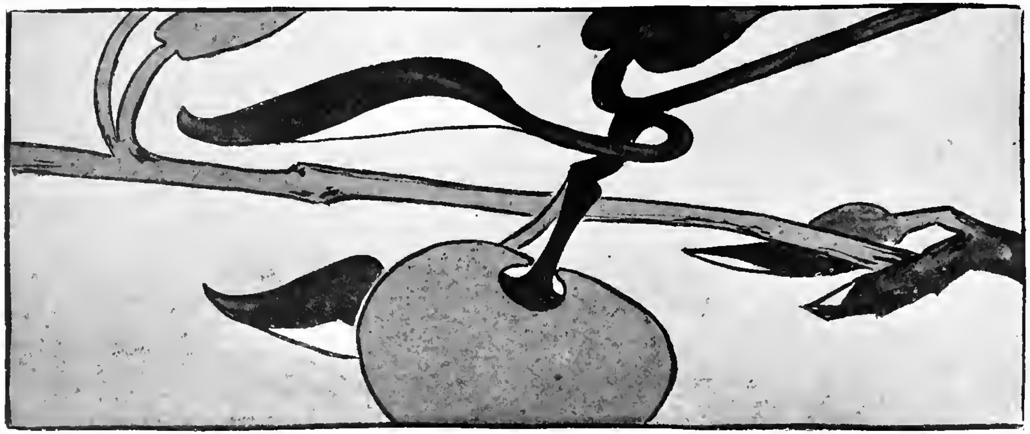
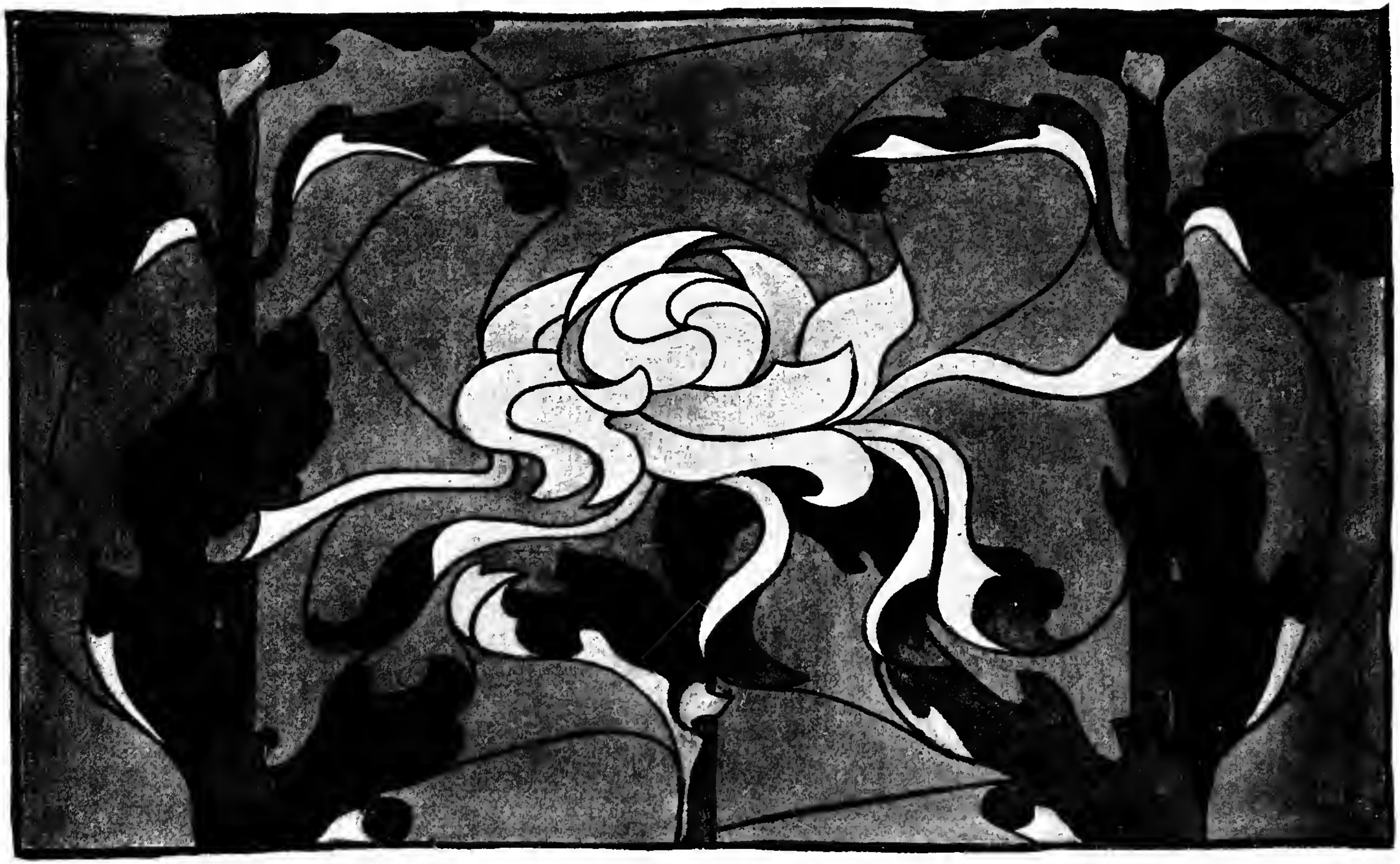


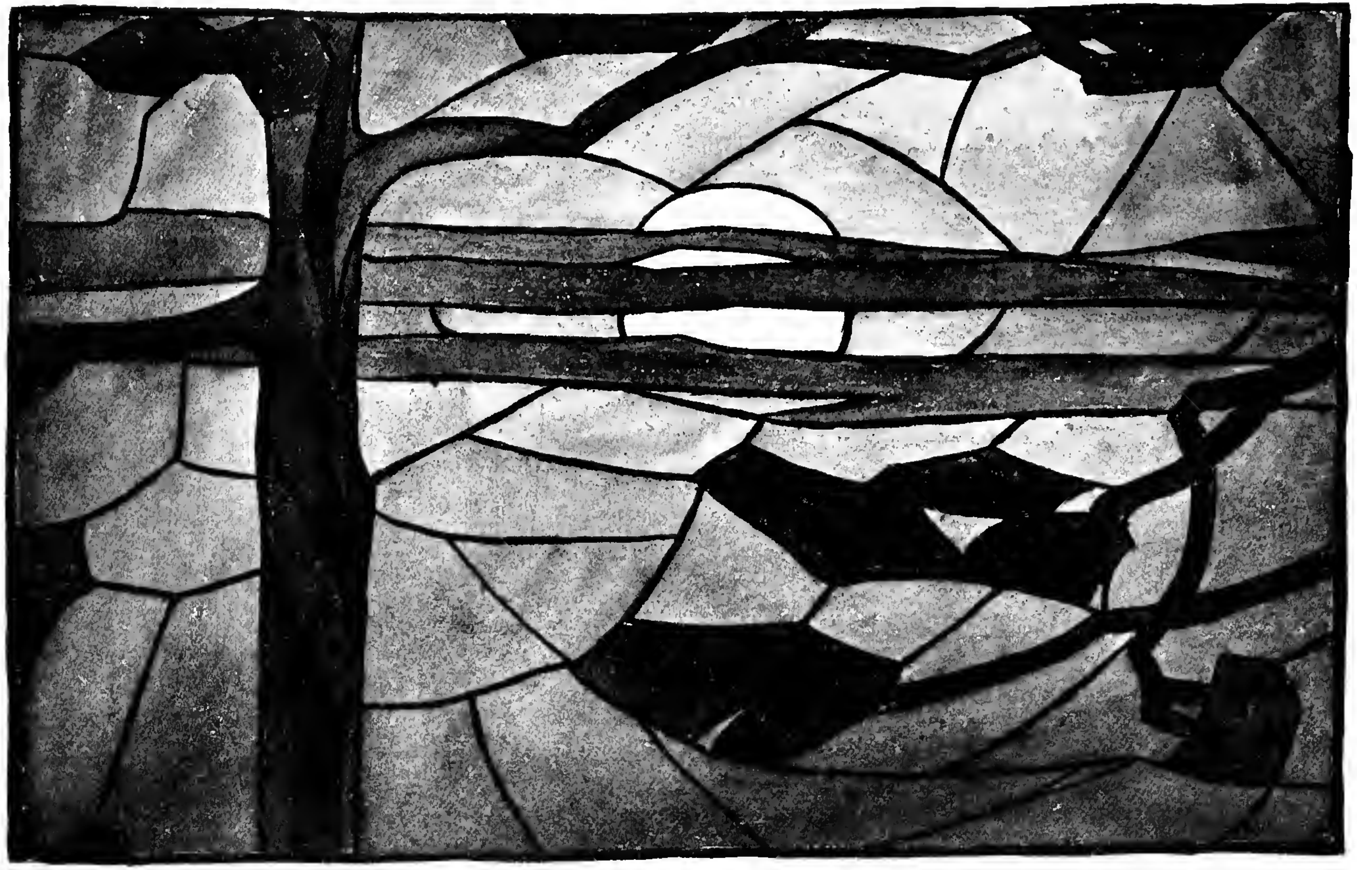
FIG. B

PLATE XXVII. DECORATIVE COMPOSITION—STAINED GLASS



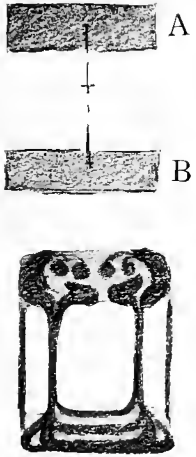
This is a decorative arrangement of the chrysanthemum growth. The flower shapes are placed on the vertical axis, slightly above the center of the space. The leaf and stem shapes on the left balance those on the right.

PLATE XXVIII. DECORATIVE COMPOSITION—STAINED GLASS

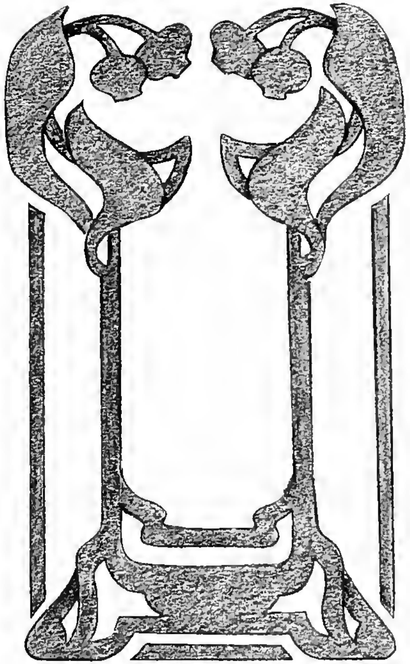


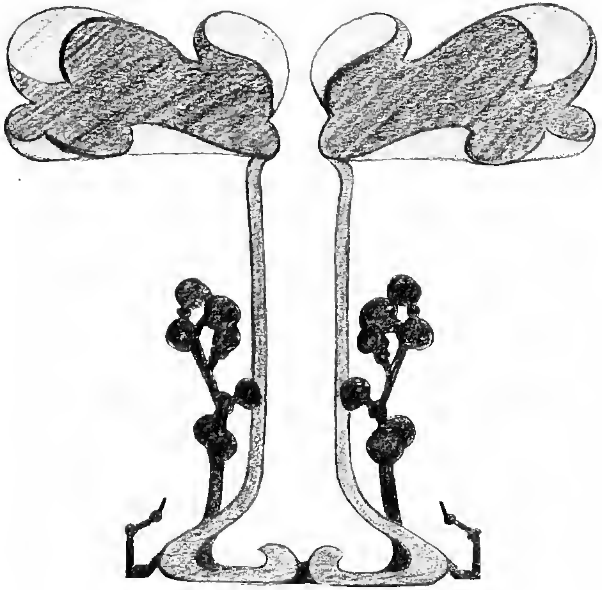
The subject of the composition is emphasized by contrast in tone and shape sustained by balanced attractions. Note that strength is obtained by using lines of opposition.

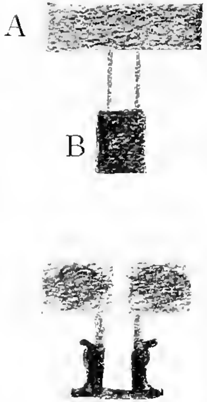
PLATE XXIX. BALANCE



A and B are equal in shape, area and tone.



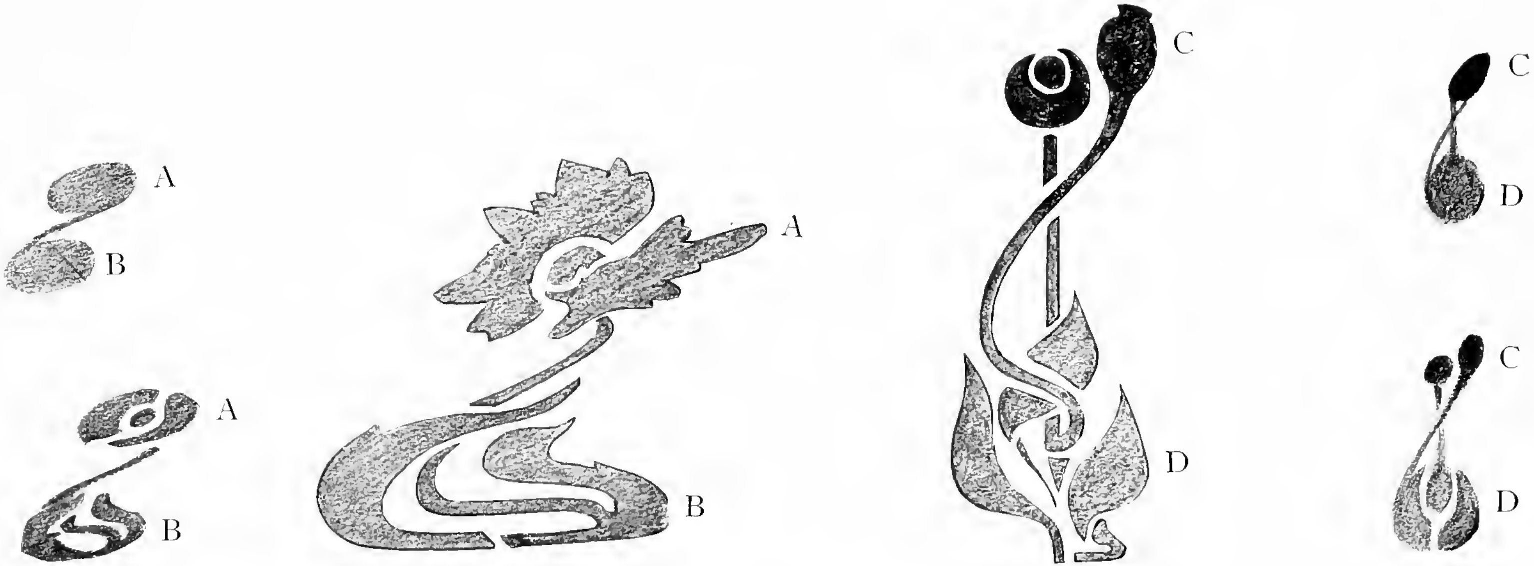




A and B are unequal in shape and in tone, but the attraction is balanced by making B one-half the area of A and twice the intensity of tone.

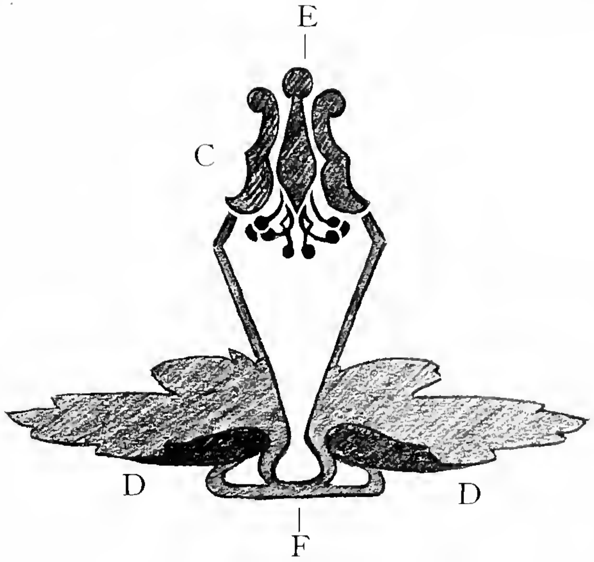
A should be slightly more attractive than B, in order to bring the point of balance above the exact center.

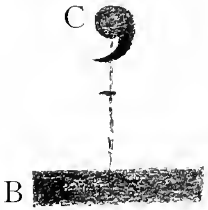
PLATE XXX. BALANCE



A and B are balanced. They are equal in shape, area and tone.
C and D are balanced. Although C is one-half the area of D, it is twice the tone.

PLATE XXXI. BALANCED UNITS





In these examples unequal attractions are balanced. The large areas D D are balanced by the smaller area C, because the area C has greater interest in shape. Fig. A is static because a vertical axis EF would divide it into two similar parts. Fig. B is occult because a vertical axis EF would divide it into areas that balance but which are not similar.

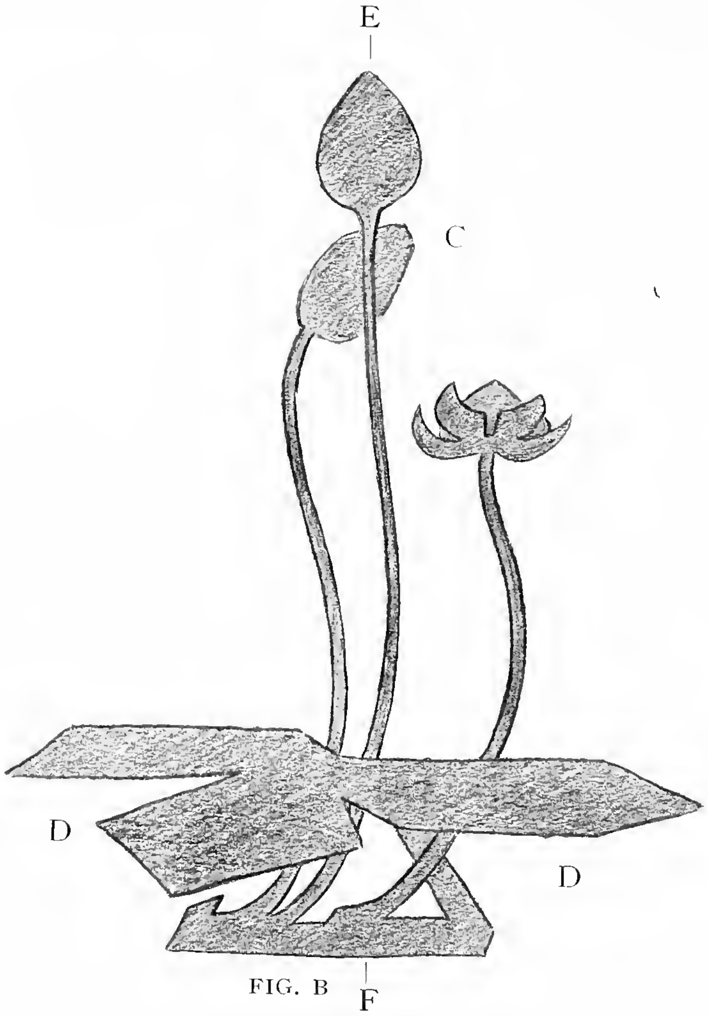


FIG. B

PLATE XXXII. BALANCED UNITS

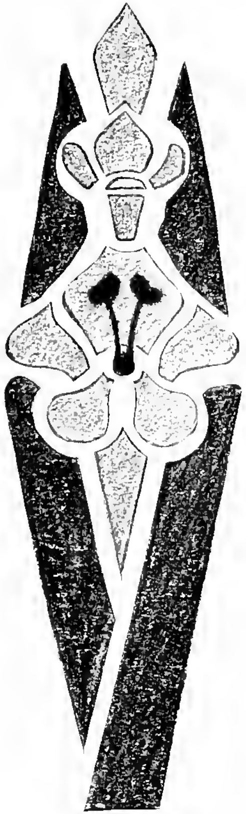


FIG. A

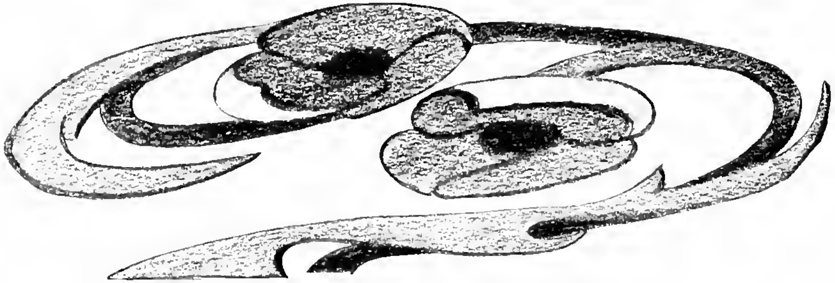
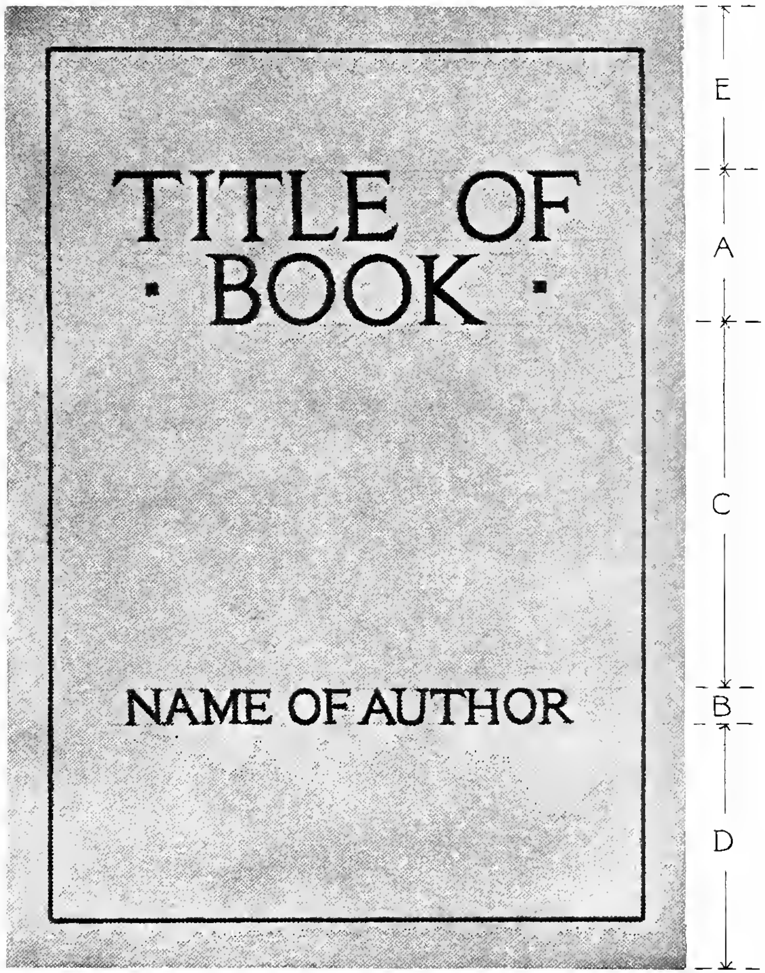


FIG. B

In these examples a variety of shapes and tones forming unequal attractions are balanced, the point of balance being placed high on the vertical axis. When a flower motif is used the character of growth determines the character of the unit, as the gladiolus or sword-lily suggests an erect unit, as in Fig. A, so the wind-blown poppy suggests the unit B.

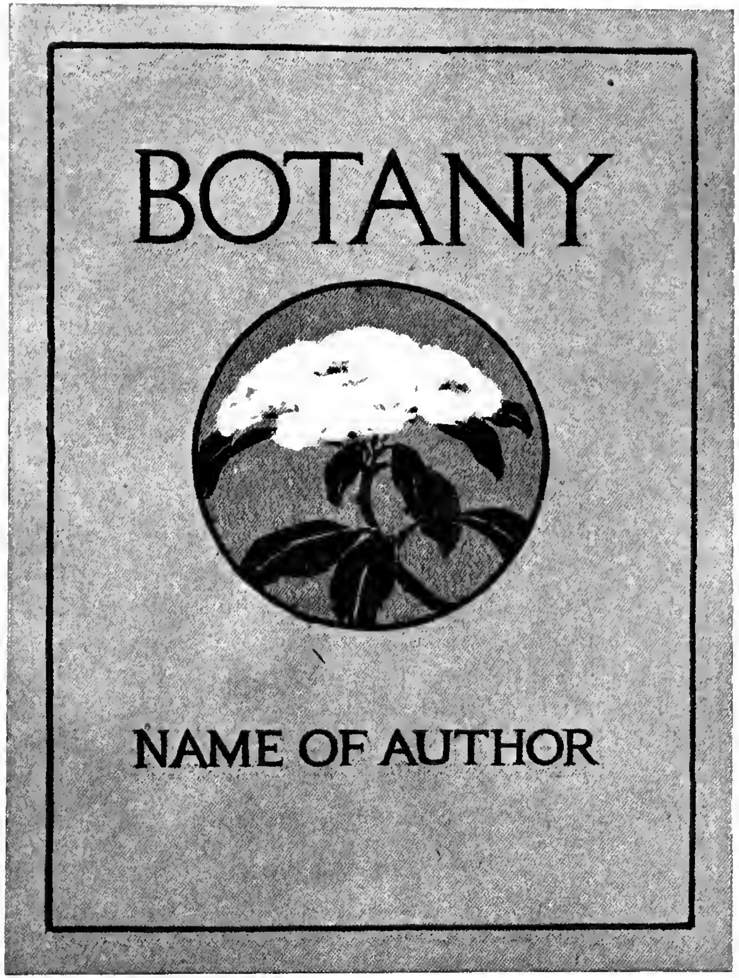
PLATE XXXIII. A BOOK COVER



I. Function:
  1. To protect contents.
  2. To classify contents.

II. Order of Development:
  1. Classification.
    (*a*) By title.
    (*b*) By name of author.
  2. Ornament.
    (*a*) Should echo title.
    (*b*) Should be subordinate to title.
    (*c*) Should have the same movement as the enclosing form
    (*d*) All lettering on the cover should be of the same style.
  3. Spacing.
    (*a*) Point of balance of cover above the center, on vertical axis, determines that the lower margin is always the greater.
    (*b*) Area A sustains a subtle proportion to area B.
    (*c*) Areas D-C-E should read 2-3-1.
  4. Color.
    (*a*) General tone, near middle value, determined by use.
    (*b*) Lettering most conspicuous by the use of dark or intense tones.

PLATE XXXIV. BOOK COVERS



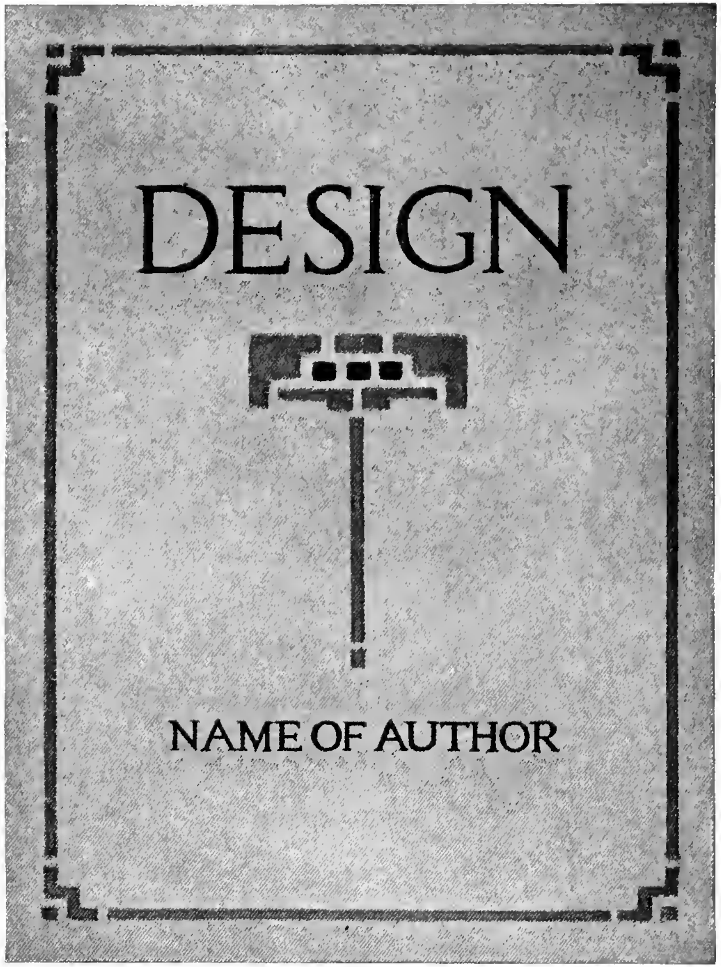
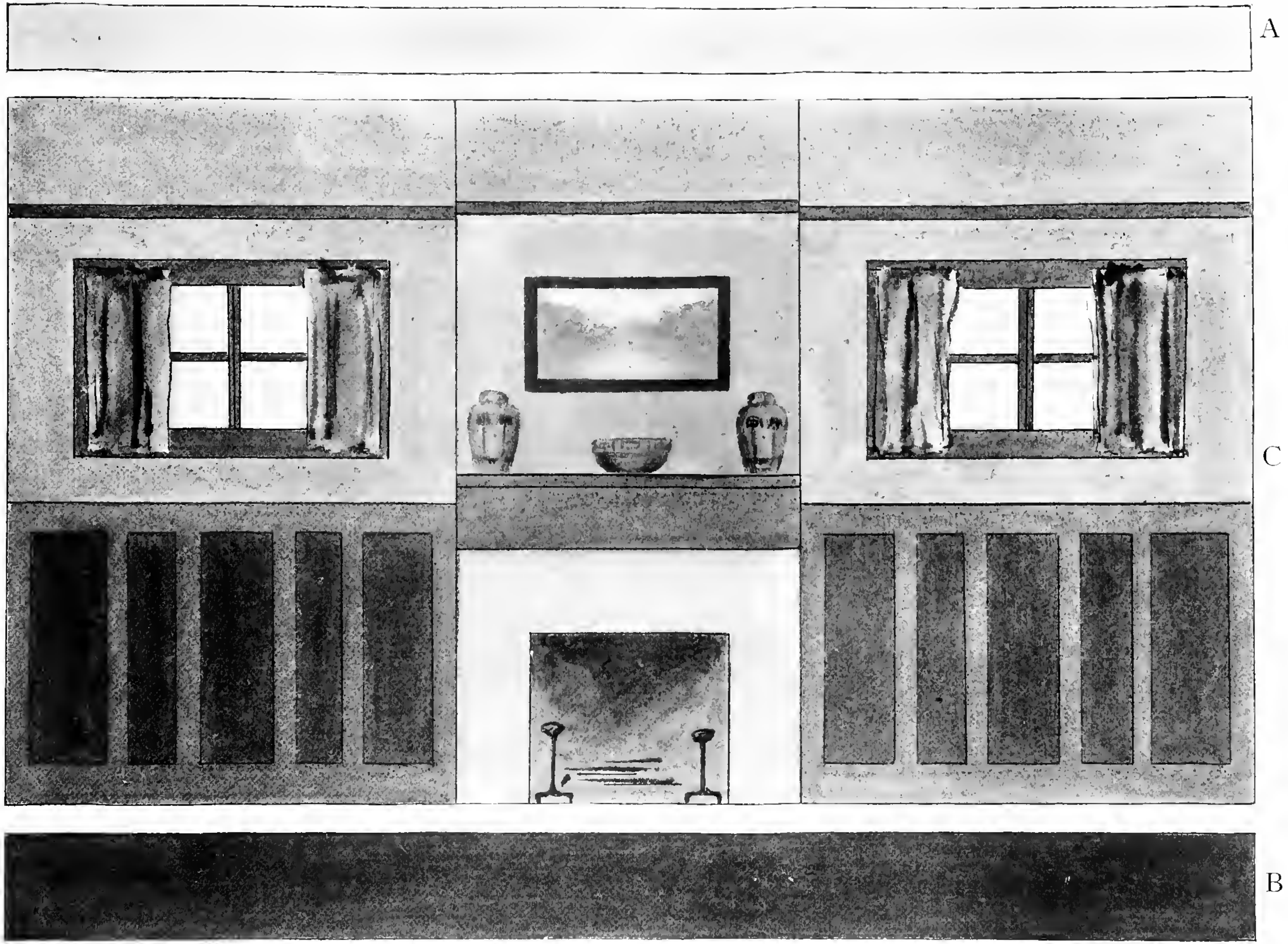


PLATE XXXV. ROOM INTERIORS

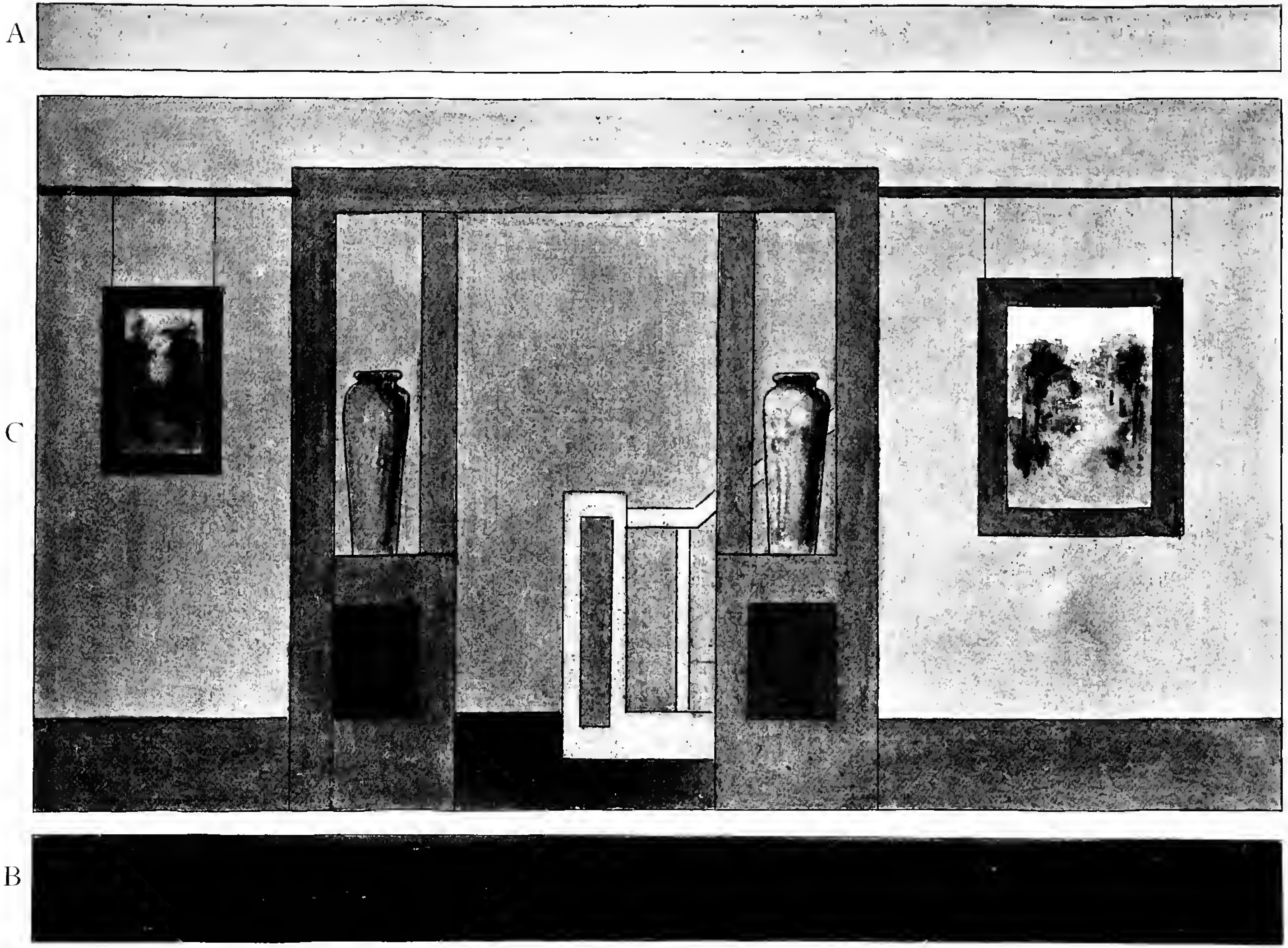


A represents the color value of the ceiling.

C represents the color value of the side wall, which should be half way between the tones of A and B. The sketch illustrates a problem in the spacing and balancing of areas.

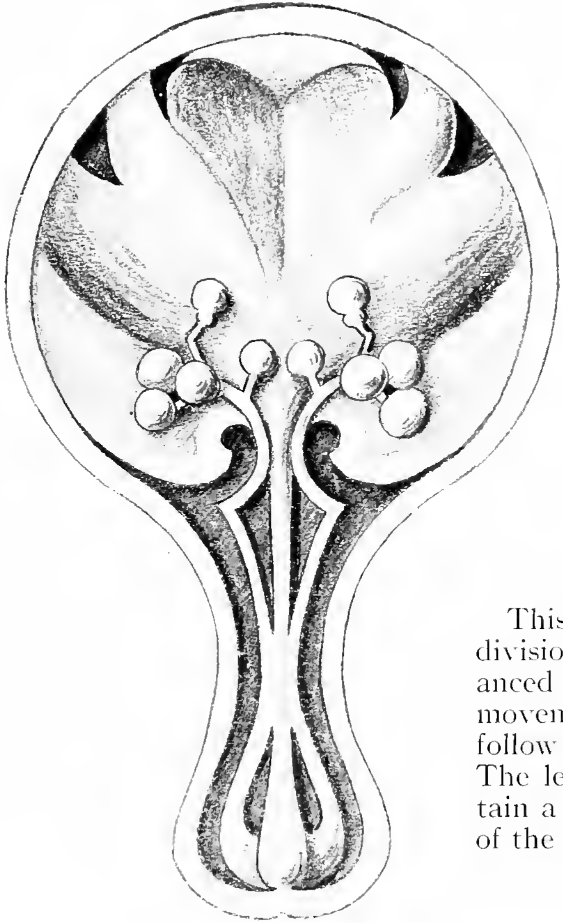
B represents the color value of the floor.

PLATE XXXVI. ROOM INTERIORS



In a room interior the ceiling, floor, walls, doors, windows, pictures and furniture are elements which should be disposed or arranged in such a way as to establish unity. There should be variety in shapes, tones and areas, but these elements must be balanced as shown in the illustration on this plate.

PLATE XXXVII. MIRROR BACKS



This is a decorative problem in the division of a given space into balanced attractions. The dominant movement of the decoration must follow lines of the enclosing form. The length of the handle must sustain a good proportion to the length of the back.

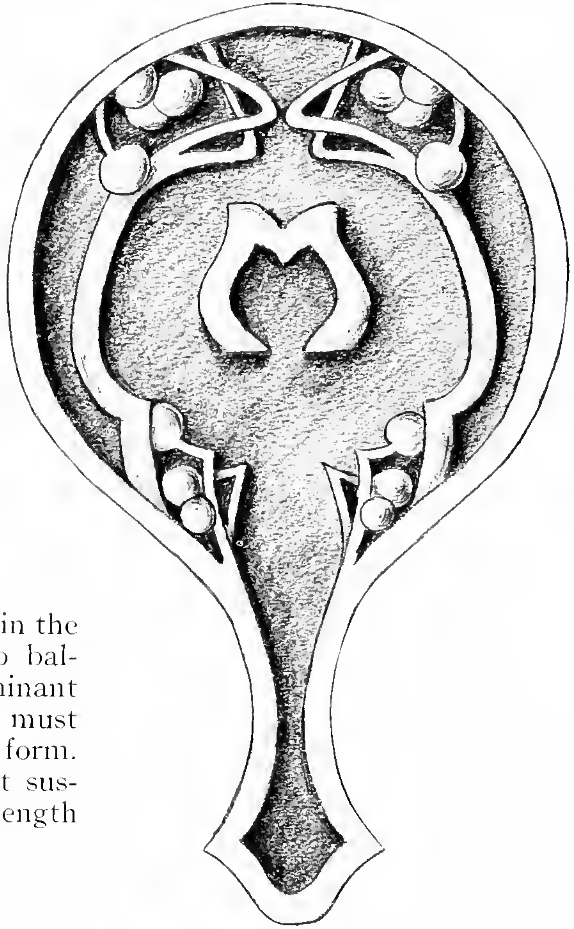
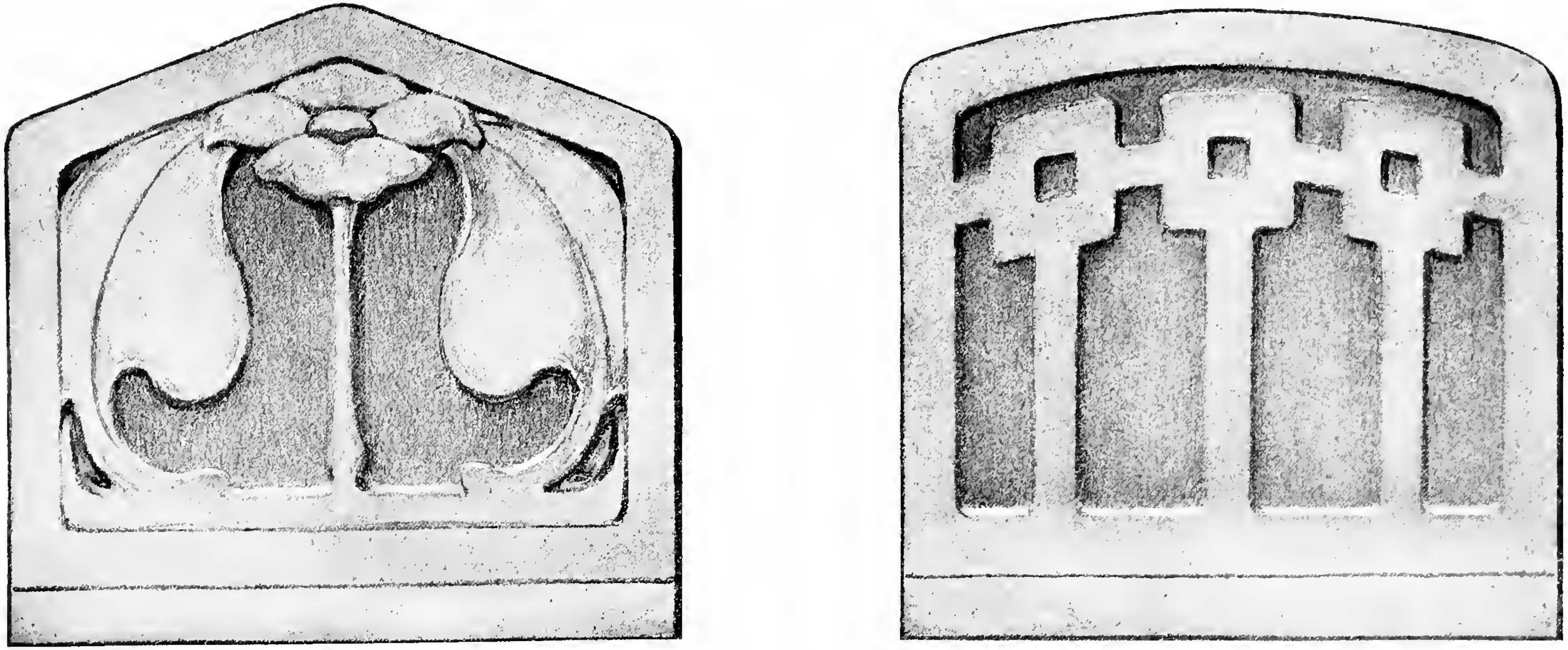


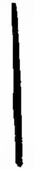
PLATE XXXVIII. BOOK STALLS



This is a decorative problem in the division of a given space into balanced attractions. The point of interest must be sustained above the center. Design the contour first, as the structural lines of a book-rack should be simple, dignified and interesting.

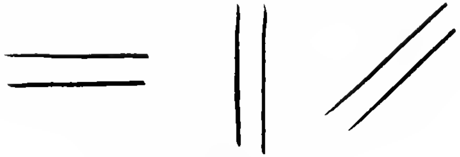
PLATE XXXIX. STRAIGHT LINES

POSITIONS



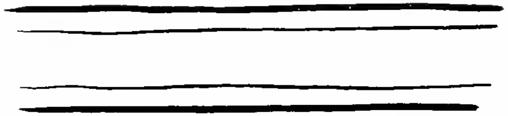
Vertical

RELATIVE POSITIONS

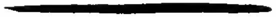


Parallel

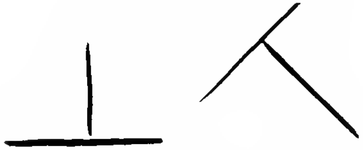
PARALLEL



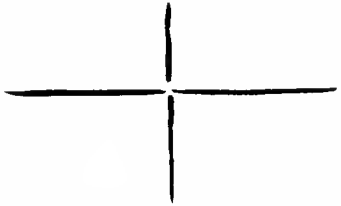
Parallel, strengthened by repetition



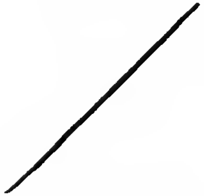
Horizontal



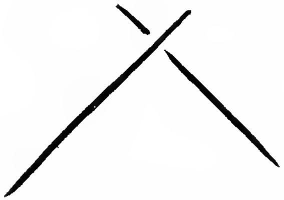
Perpendicular



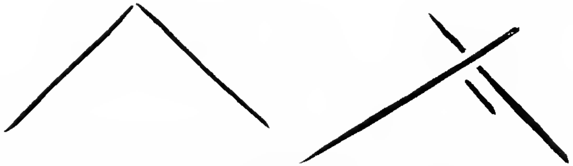
Perpendicular, strengthened by opposition



Inclined



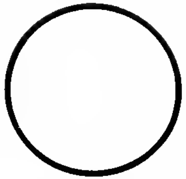
Inclined



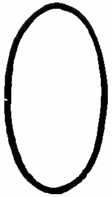
Inclined, strengthened by balance and opposition.

PLATE XL. CURVES

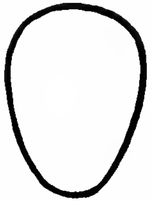
SIMPLE



Monotonous

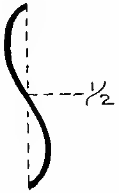


Less monotonous

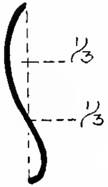


More interesting because more subtle

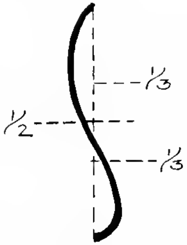
COMPOUND



Avoid one-half measure



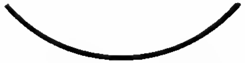
Avoid one-third measure



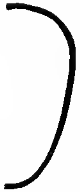
Aim for subtle measure

TYPES

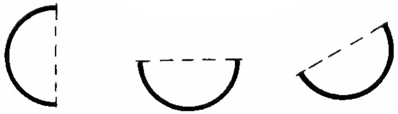
Dome—protection



Convex—restlessness

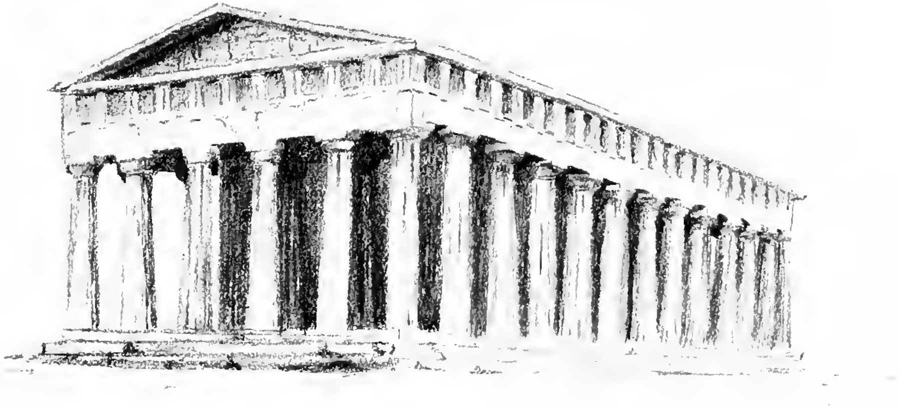


Oval—Æsthetic

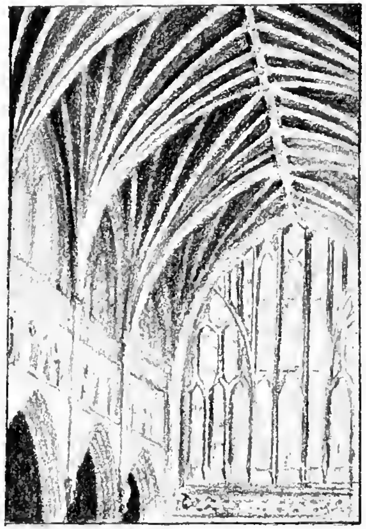


Horizontal, vertical and oblique curves, measured on chords

PLATE XLI. LINES OF REPETITION IN ARCHITECTURE



THE THESEUM



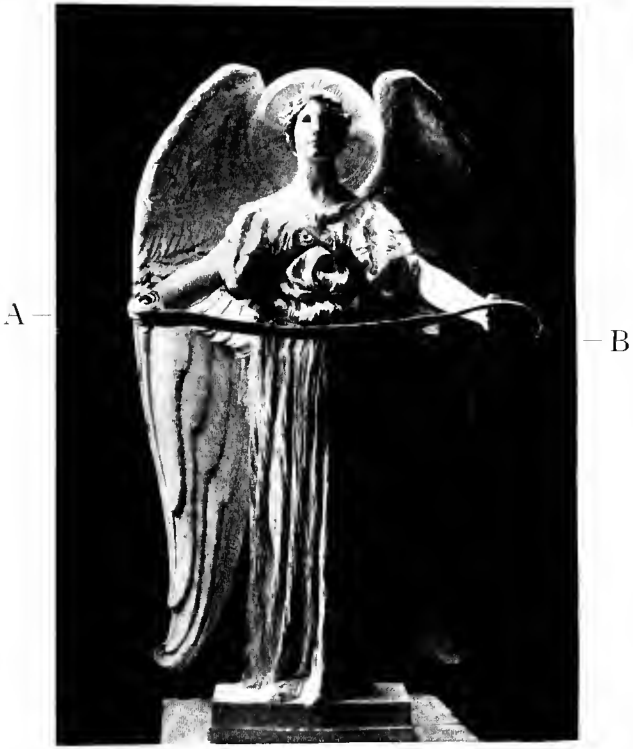
CATHEDRAL AT EXETER

The Temple of Theseus, called the Theseum, is one of the best preserved of the Greek temples at Athens. The length of the side of the building sustains a subtle proportion to the width of the front. The vertical line carried out by the columns is again repeated in panels just below the roof.

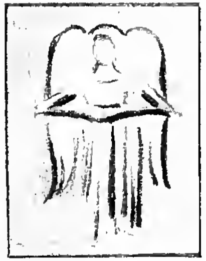
The Cathedral at Exeter.—The ribbed vaulting repeats in many lines the structural lines of the Gothic arch, as shown in the illustration. The entire building is an example of consistency. Every line in it repeats, in some variation, the structural lines.

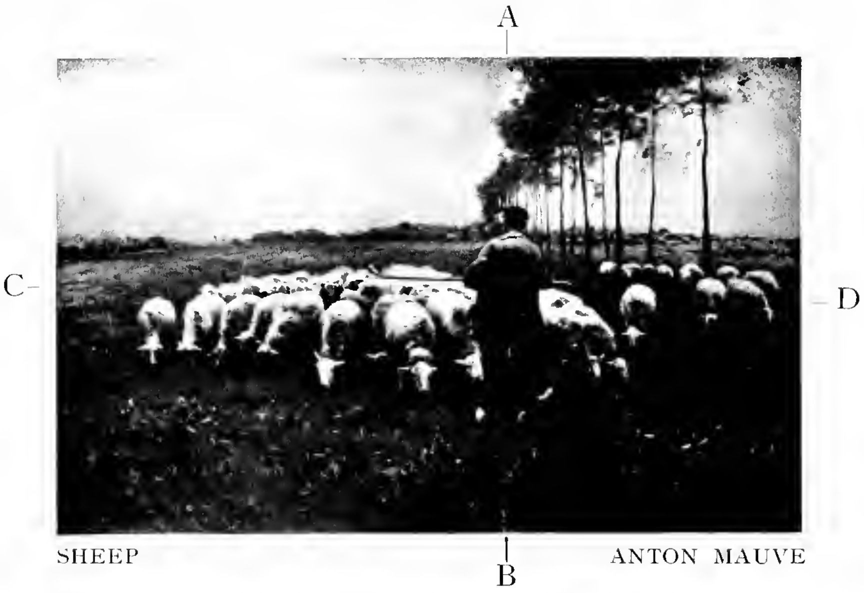
These examples illustrate how lines of repetition are used to emphasize structure. Repetition is a form of rhythm. Rhythm is an element of beauty.

XLII. LINES OF OPPOSITION IN PICTORIAL COMPOSITION



MEMORIAL FIGURE H. ADAMS

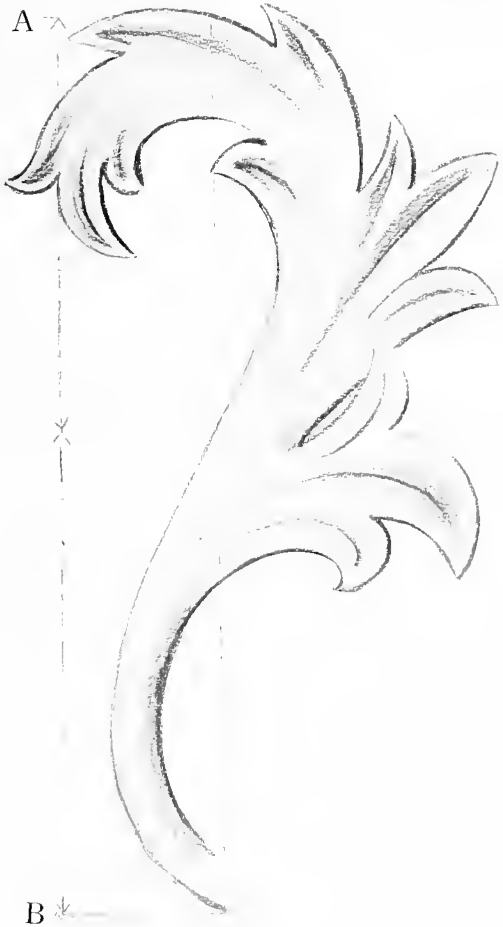




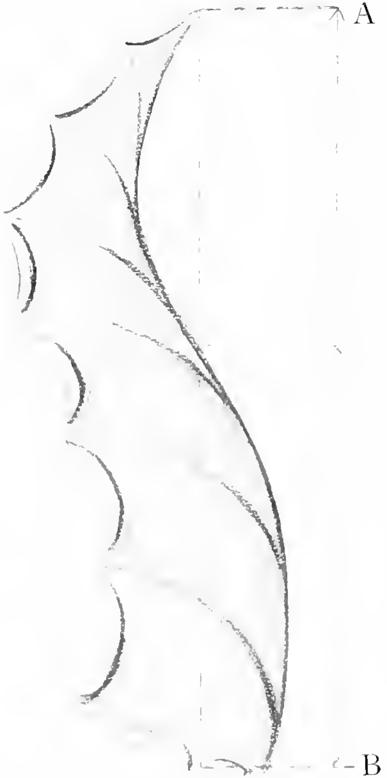
SHEEP ANTON MAUVE

The examples illustrate how lines of opposition strengthen the subject of a picture. Notice how the lines of opposition A-B and C-D divide the composition as a whole into areas proportioned as 2 is to 3. Refer to Plate II. In the picture by Mauve not only are lines of opposition used but contrast in tone is also employed to keep the interest on the sheep and the shepherd.

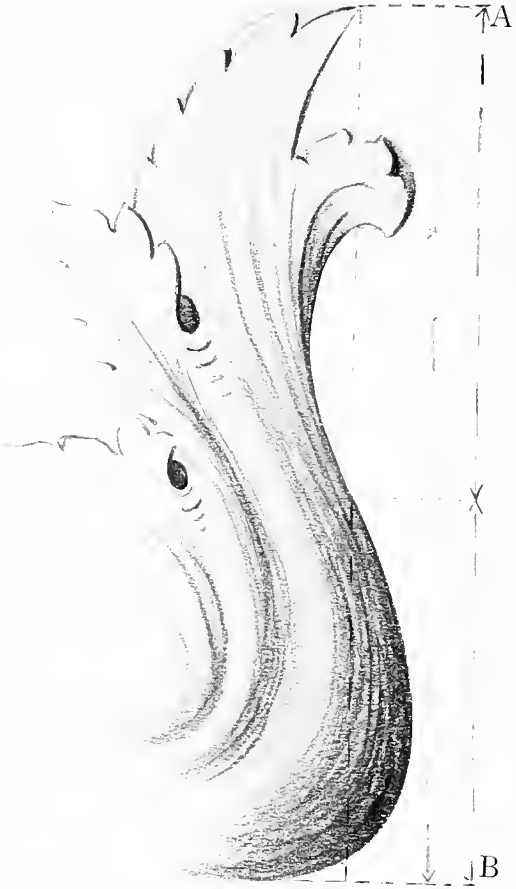
PLATE XLIII. THE COMPOUND CURVE AS ILLUSTRATED IN HISTORIC ORNAMENT



BYZANTINE



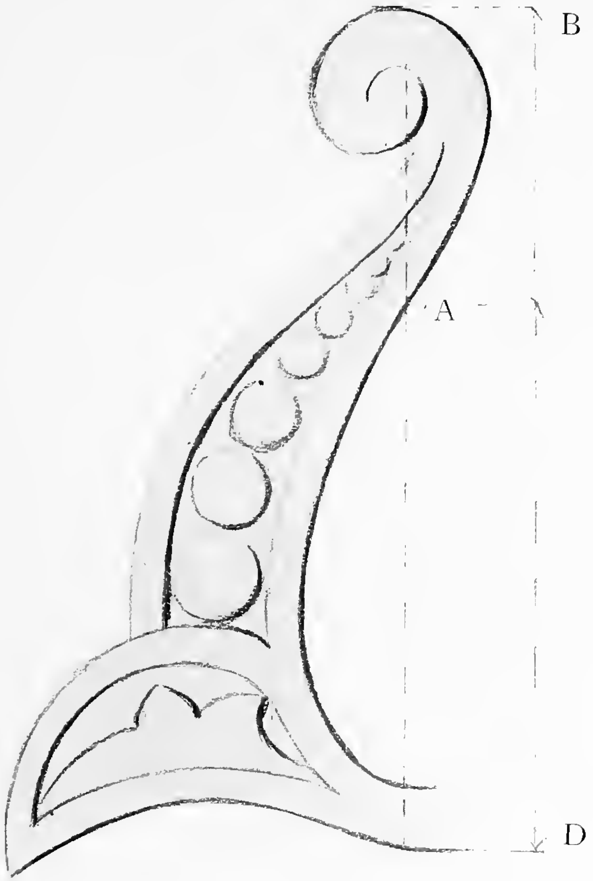
GREEK



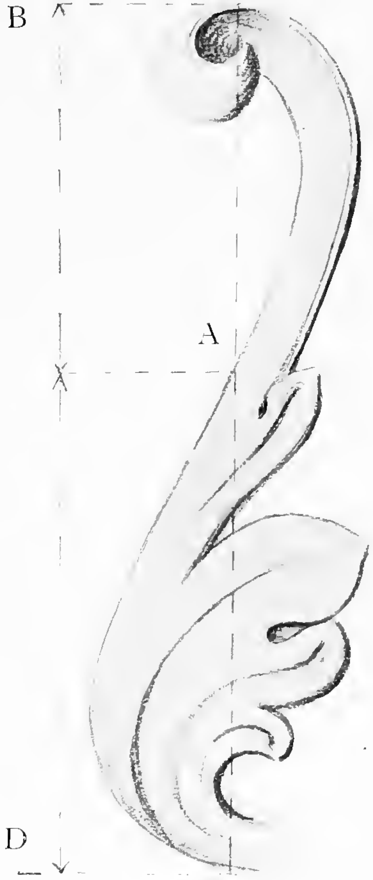
PERSIAN

Curves are measured on a chord. The division of the chords A-B represents the proportion of 2 to 3. The curves cross the chords near the center but not in the center. Refer to Plate XL.

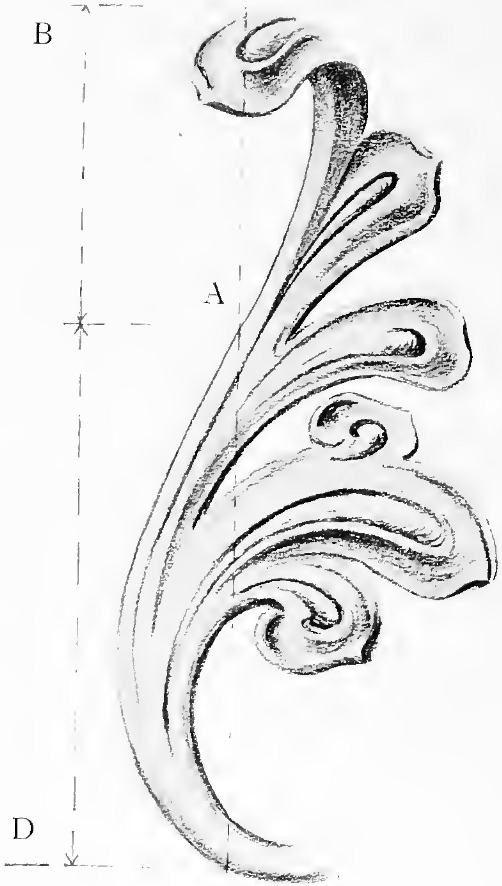
PLATE XLIV. COMPOUND CURVES



SARACENIC



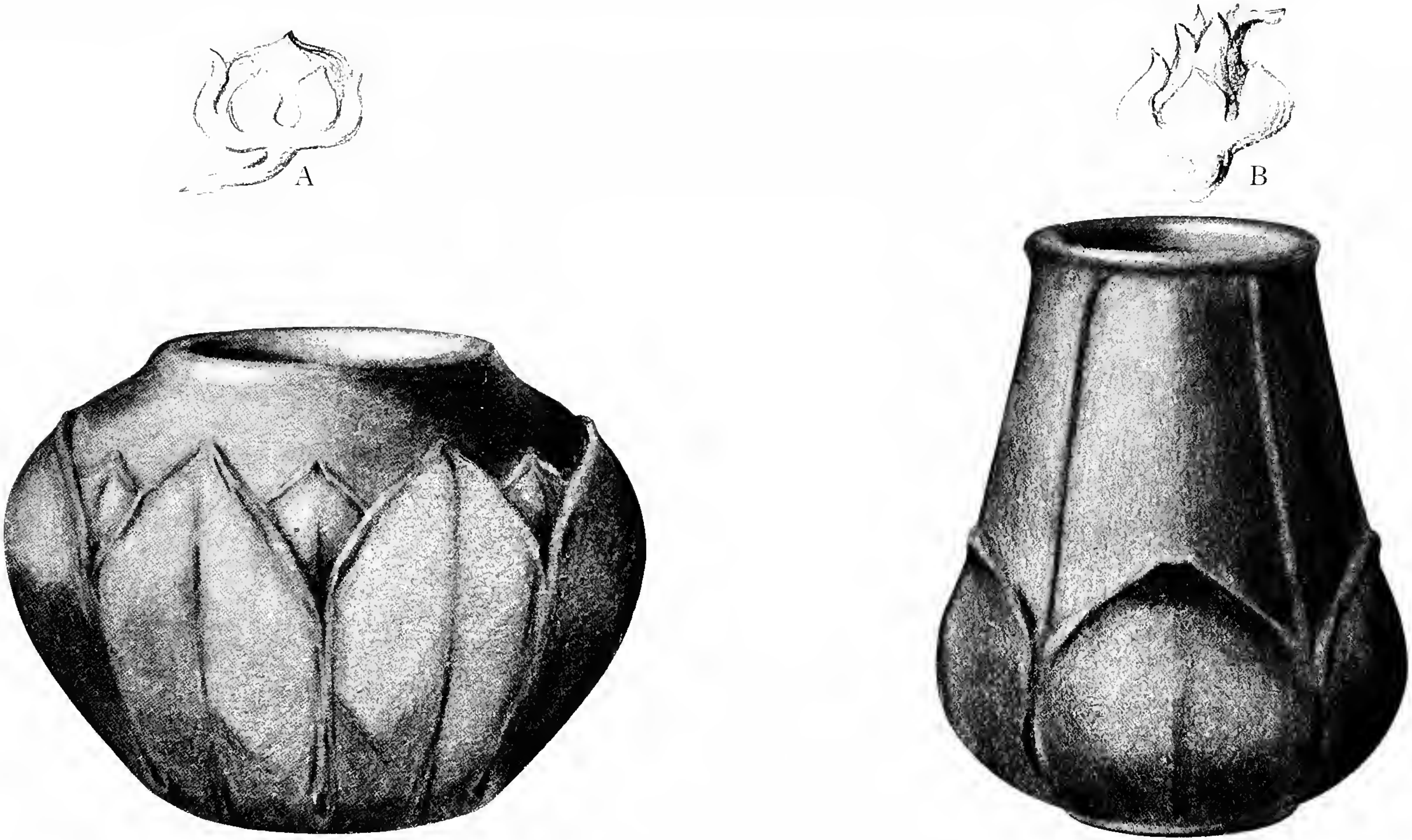
RENAISSANCE



GOTHIC

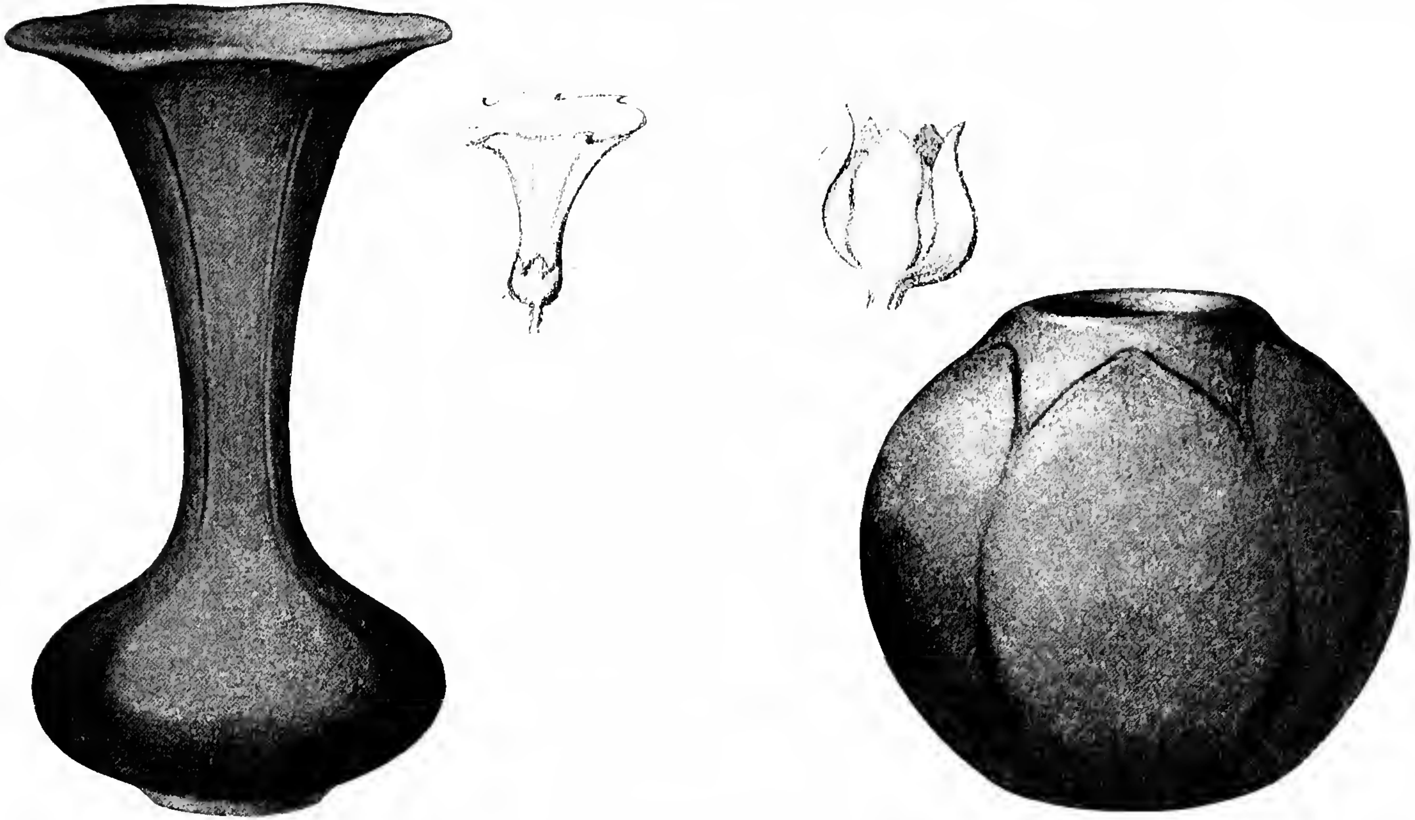
Point A, the point where the compound curve crosses the chord, is less than one-half and more than one-third of B-D, the total length of the chord. Refer to Plate XL.

PLATE XLV. COMPOUND CURVES EVOLVED FROM NATURE FORMS



Study compound curves in flowers and buds. Select some one form, as A and B, and apply it to pottery construction. Draw first the vertical axis and then the chord on which to construct the compound curve.

PLATE XLVI. COMPOUND CURVES EVOLVED FROM NATURE FORMS



Vase forms should be beautiful in proportion, simple in contour, and should fit the purpose for which they are intended. The decoration, if any, should not call attention to itself, but should seem to be a constituent part of the vase.

PLATE XLVII. RHYTHM

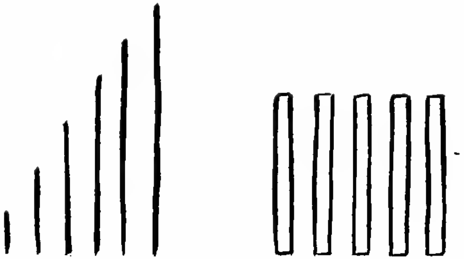
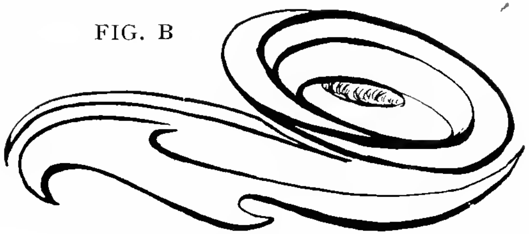
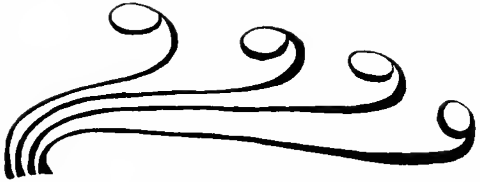


FIG. B





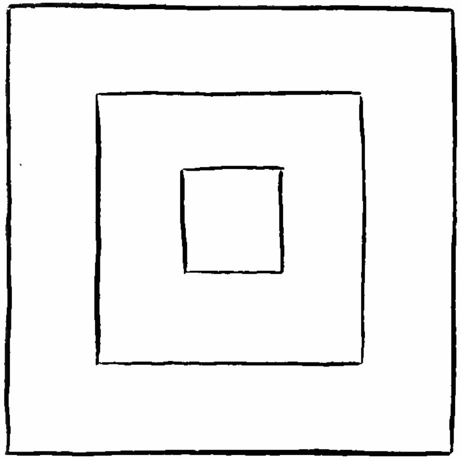


FIG. A

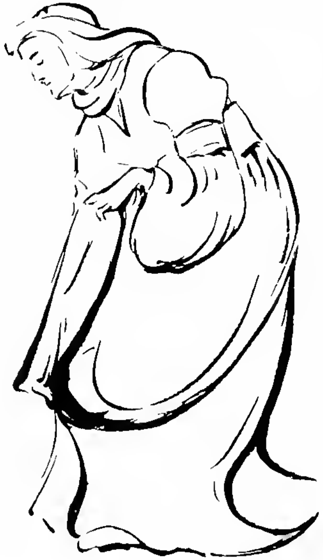


FIG. C

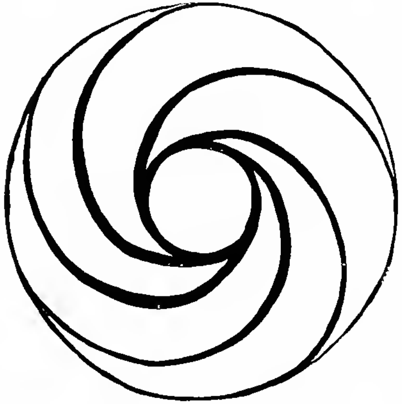


FIG. D

Rhythm is consistent movement. When the enclosing form is rectangular the dominant movement of the parts must have the same character, as in Fig. A. When the enclosing form swings into curves the parts must repeat the flow of lines as in Figs. B, C and D.

PLATE XLVIII. RHYTHM

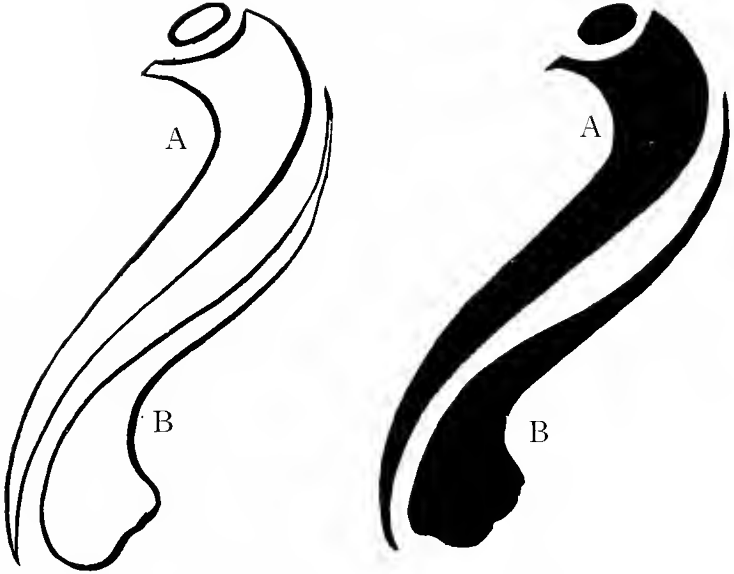


Fig. 1

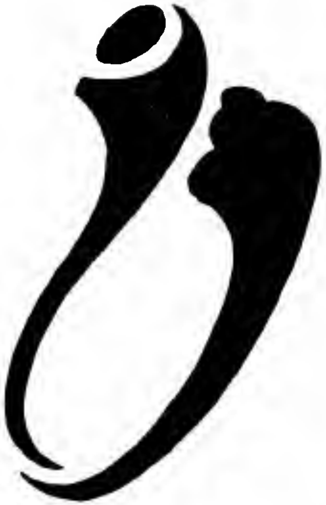


Fig. 3

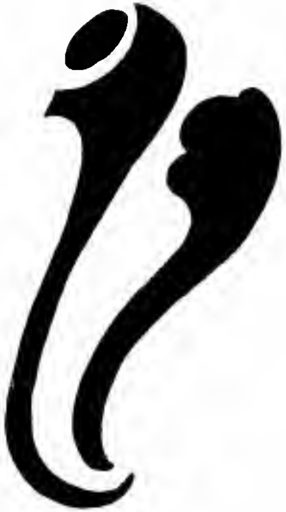


Fig. 4

In Fig. 1, A and B are rhythmic in line, but are not rhythmic in mass. In both examples area A has an upward movement, and area B a downward movement. Units should not move with equal force in opposite directions.

Figs. 3 and 4 are rhythmic in line and mass, because all the lines and areas move in one direction.

PLATE XLIX. RHYTHM AS AFFECTING EYE MOVEMENT

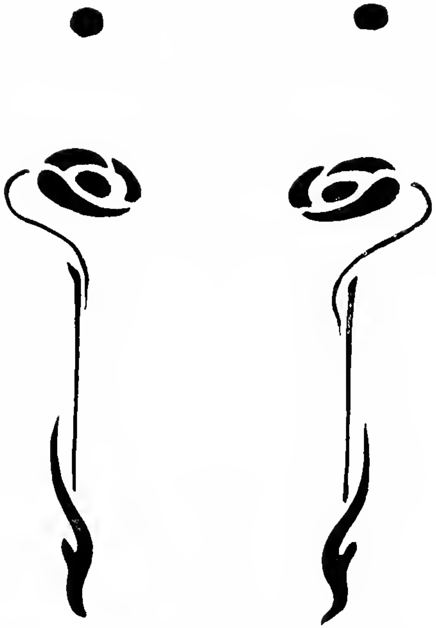


FIG. 1

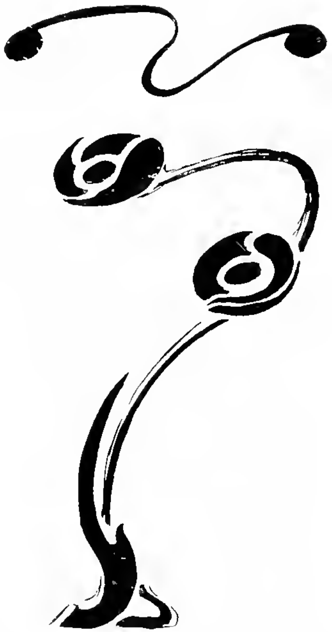


FIG. 2

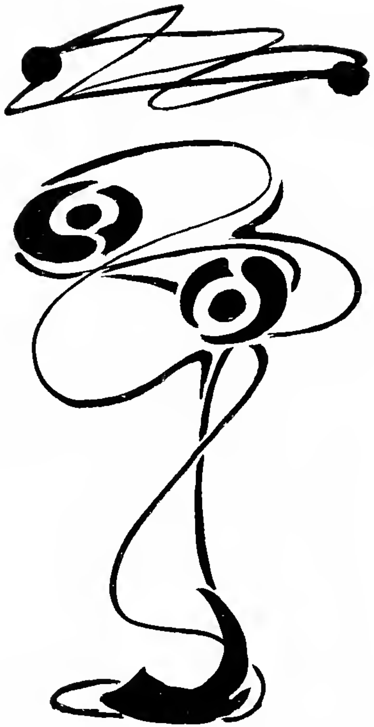


FIG. 3

In Fig. 1 the eye travels in a straight line. In Fig. 2 the curved line controls the direction in which the eye travels. In Fig. 3 the multiplicity of lines confuses the eye movement.

PLATE L. RHYTHM IN LINE, AREA AND TONE

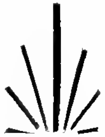


FIG. 1

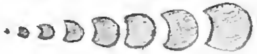


FIG. 3

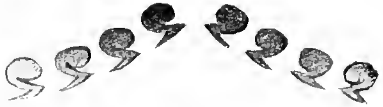


FIG. 5

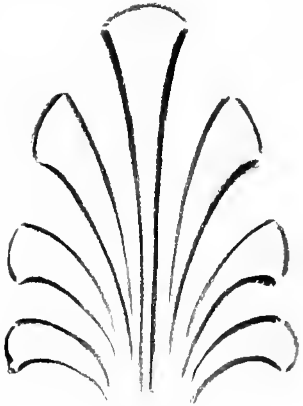


FIG. 2

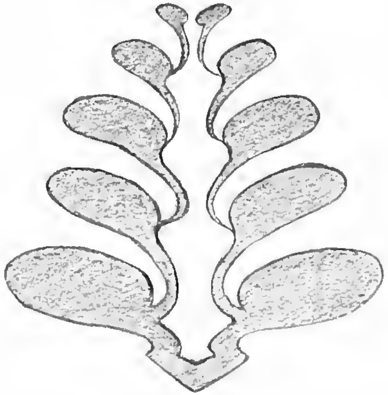


FIG. 4

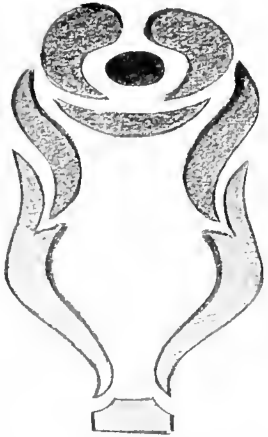
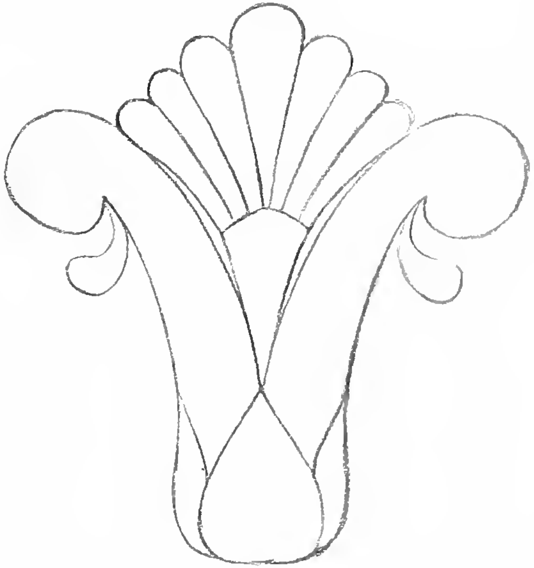


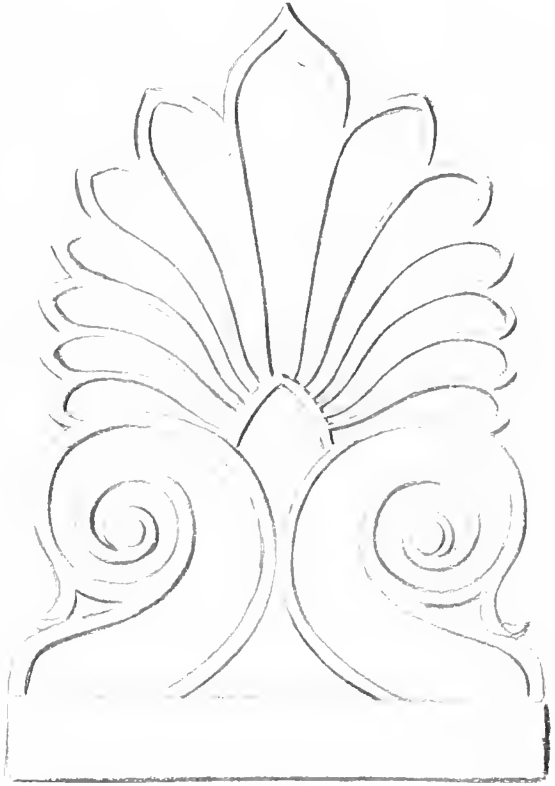
FIG. 6

Figs. 1 and 2 show a related movement expressed in line.
Figs. 3 and 4 show a related movement expressed in areas.
Figs. 5 and 6 show a related movement expressed in tones.

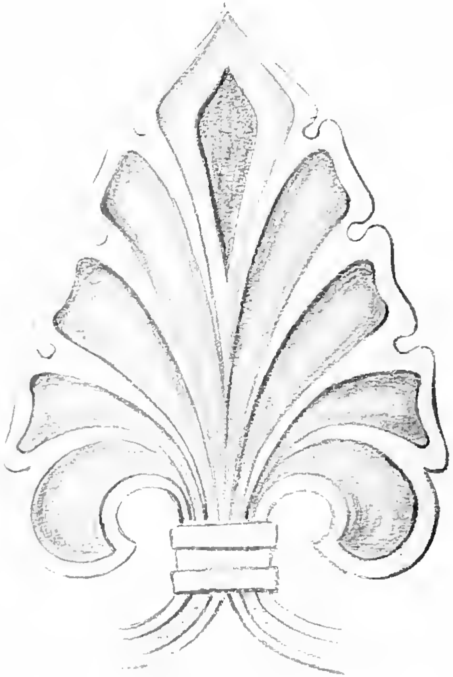
PLATE LI. RHYTHM IN HISTORIC ORNAMENT



EGYPTIAN



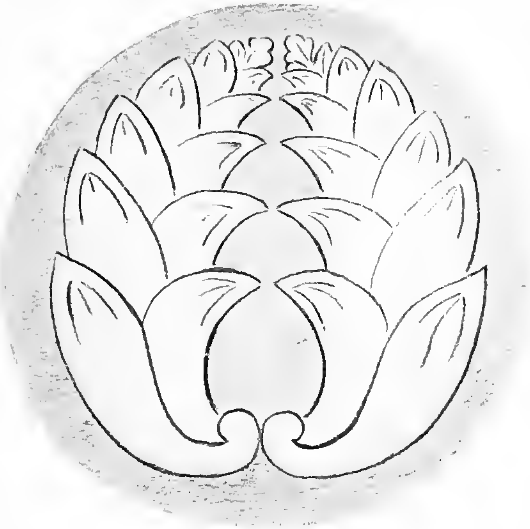
GREEK



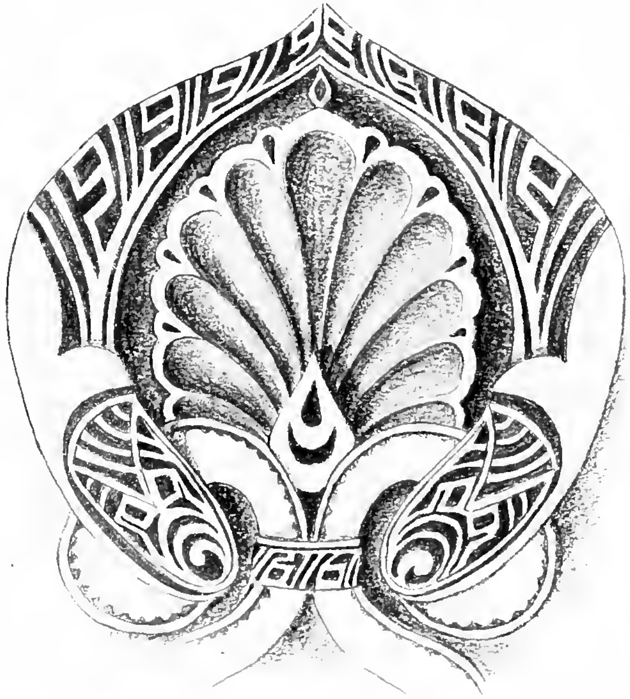
BYZANTINE

The principle of rhythm is employed extensively in the ornament of all nations. The three examples on this page are typical.

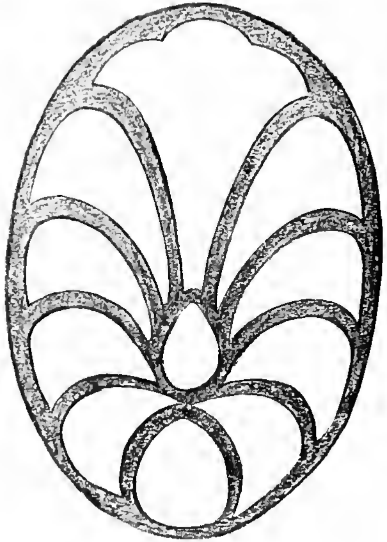
PLATE LII. RHYTHM IN HISTORIC ORNAMENT



JAPANESE



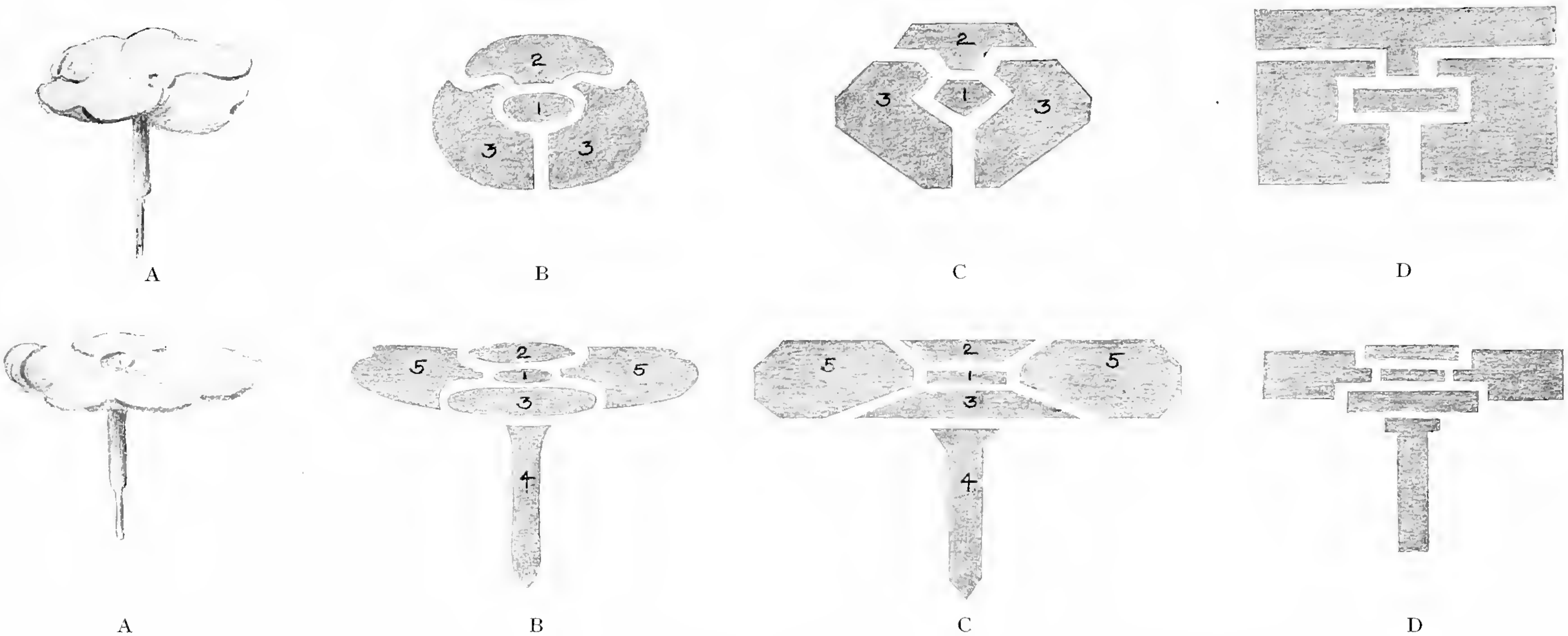
SARACENIC



INDIAN

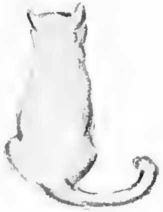
Three more examples of the use of rhythm in historic style are given on this page.

PLATE LIII. DEVELOPMENT OF A DESIGN UNIT

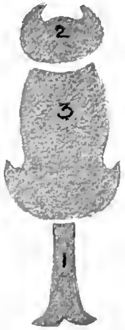


The figures marked A are flowers selected for motifs. The figures marked B are the naturalistic motifs translated into curves. The figures marked C are the same motifs translated into straight lines. The figures marked D appear as an arrangement of vertical and horizontal lines. The proportion found in the flowers should be retained in the translated units, as indicated by the numerals in the sketches.

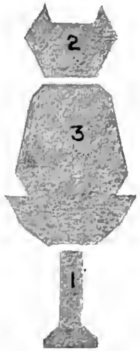
PLATE LIV. DEVELOPMENT OF A DESIGN UNIT



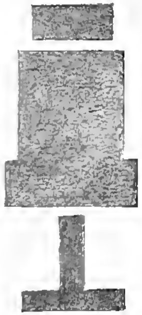
Naturalistic motif.



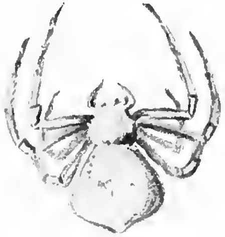
Translated into curves.



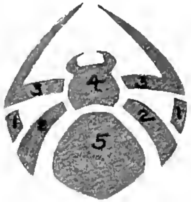
Into straight lines.



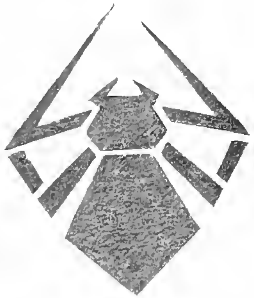
Into horizontal and vertical lines.



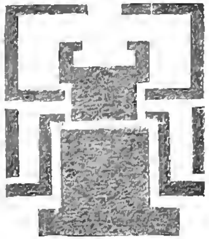
Naturalistic motif.



Translated into curves.

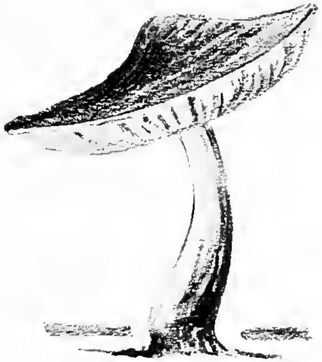


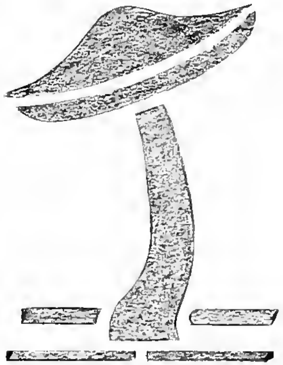
Into straight lines.

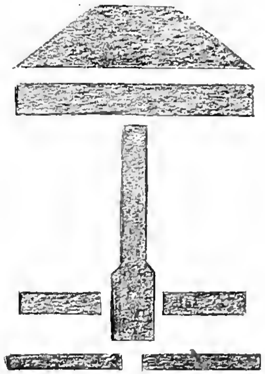


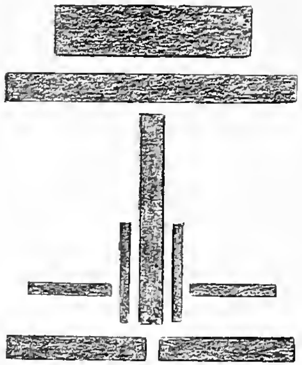
Into horizontal and vertical lines.

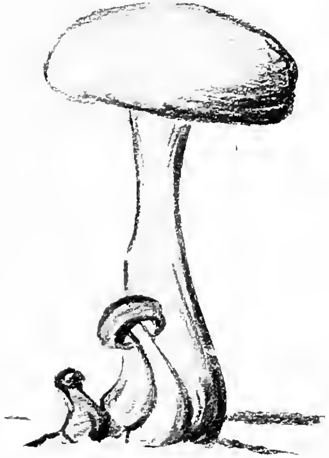
PLATE LV. DEVELOPMENT OF A DESIGN UNIT

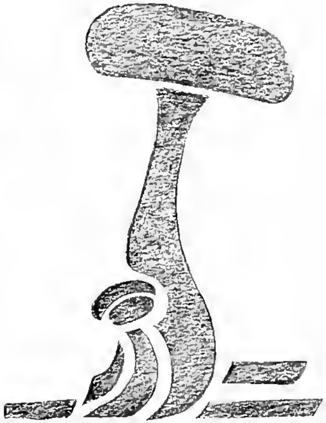

Naturalistic motif.

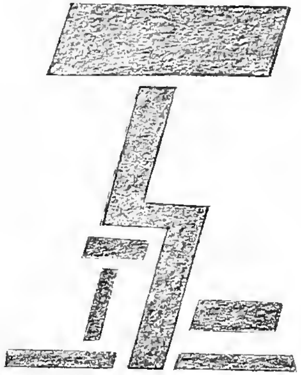

Translated into curves.


Into straight lines.


Into horizontal and vertical lines.


Naturalistic.


Conventional.


Conventional.

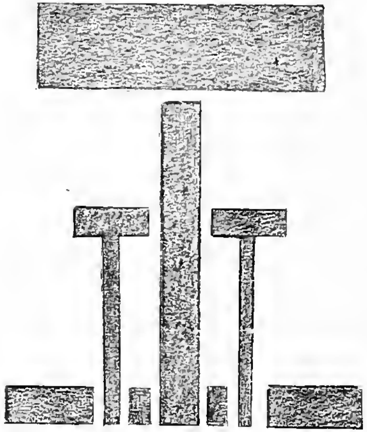
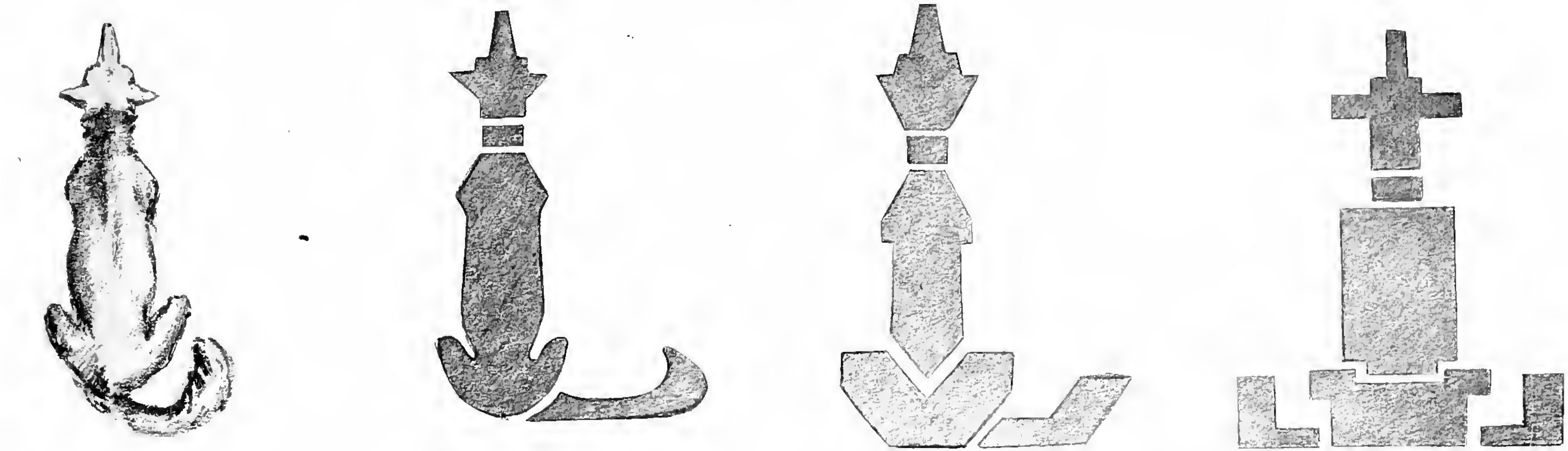
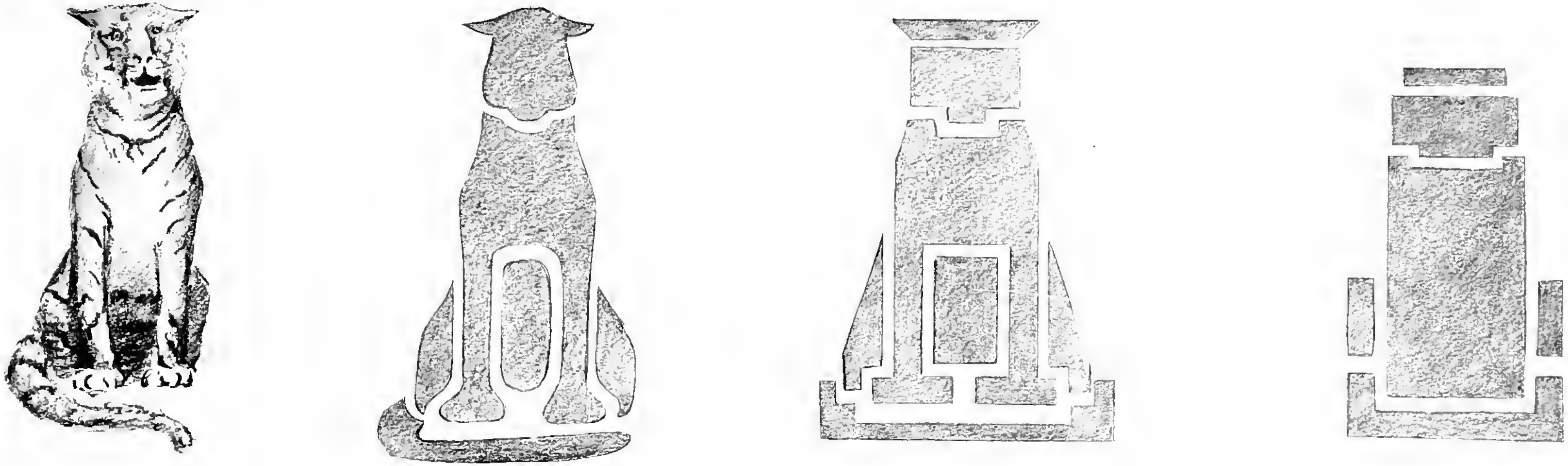

Abstract.

PLATE LVI. DEVELOPMENT OF A DESIGN UNIT

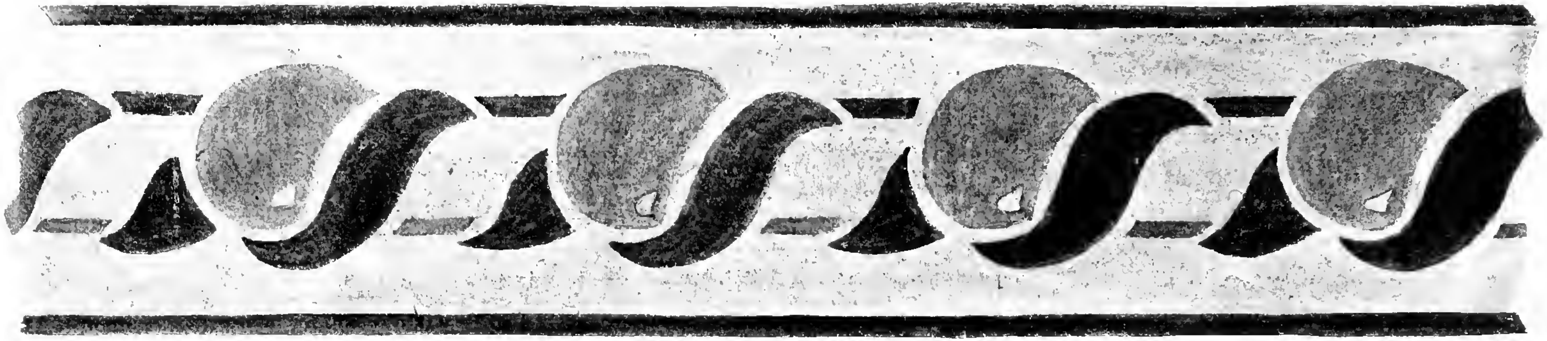


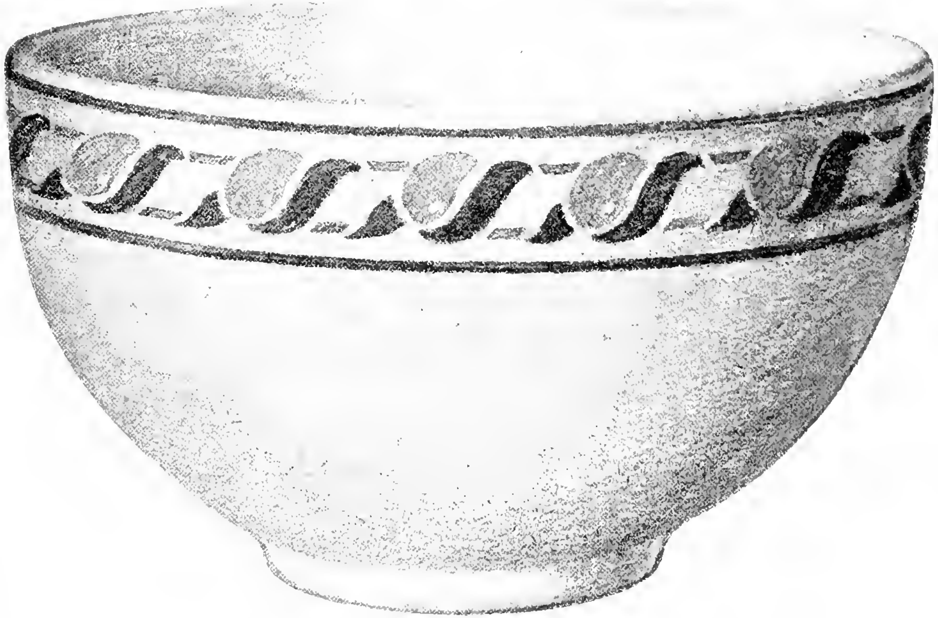
Naturalistic motif. Translated into curves. Into straight lines. Into horizontal and vertical lines.



Naturalistic. Conventional. Conventional. Abstract.

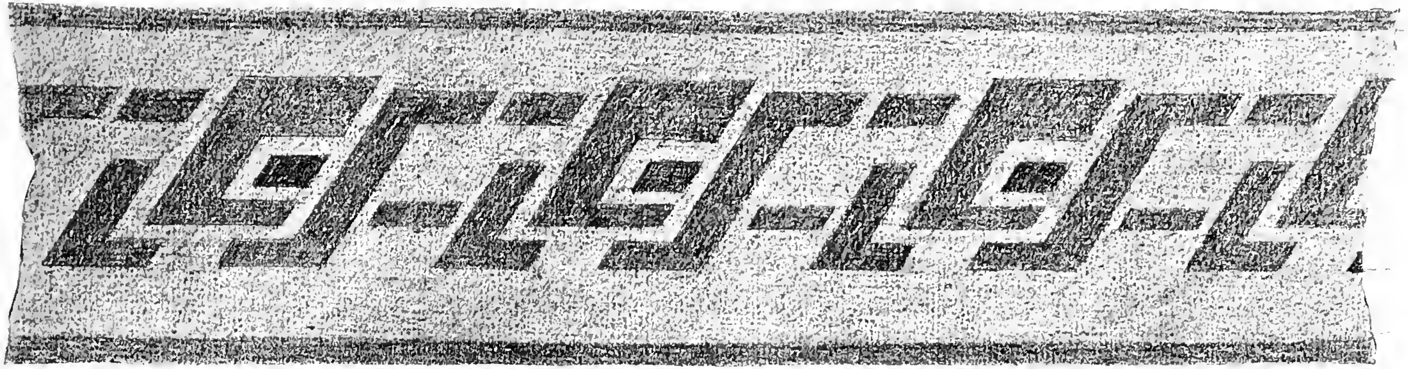
PLATE LVII. A DESIGN UNIT APPLIED



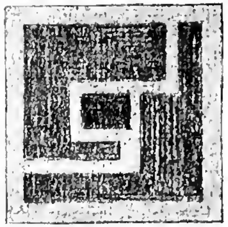


The purpose of a unit determines its character—that is, the material and use of an object to be decorated determines how conventional the unit must be. The examples show a unit evolved from an apple repeated in a border for a stencil.

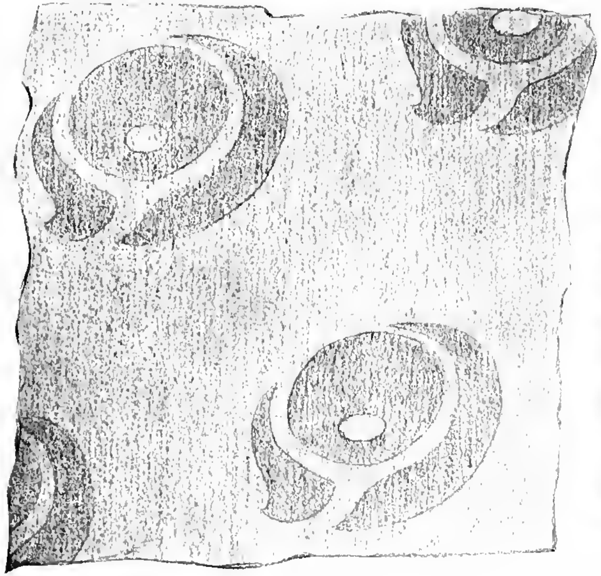
E LVIII. DESIGN UNITS APPLIED IN DIFFERENT MATERIALS



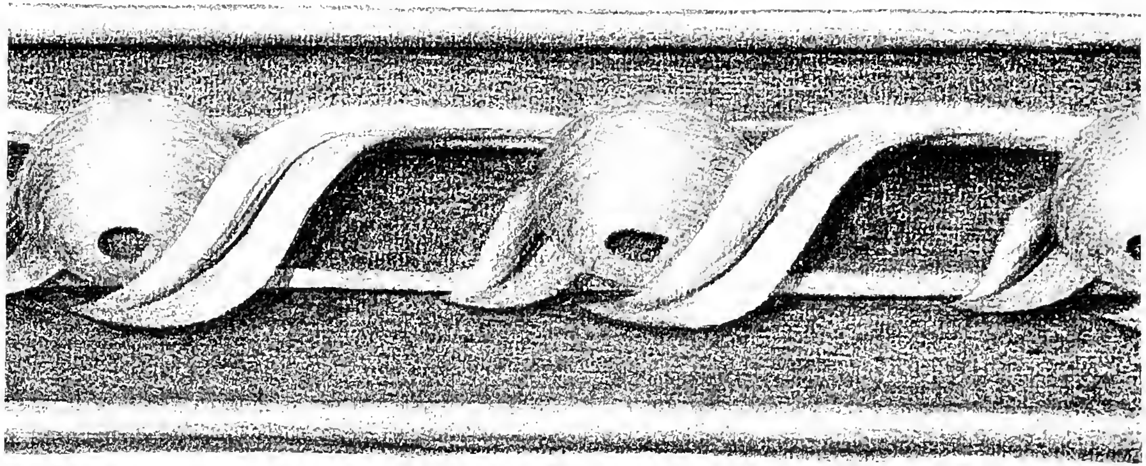
Modified for wood.



For metal.

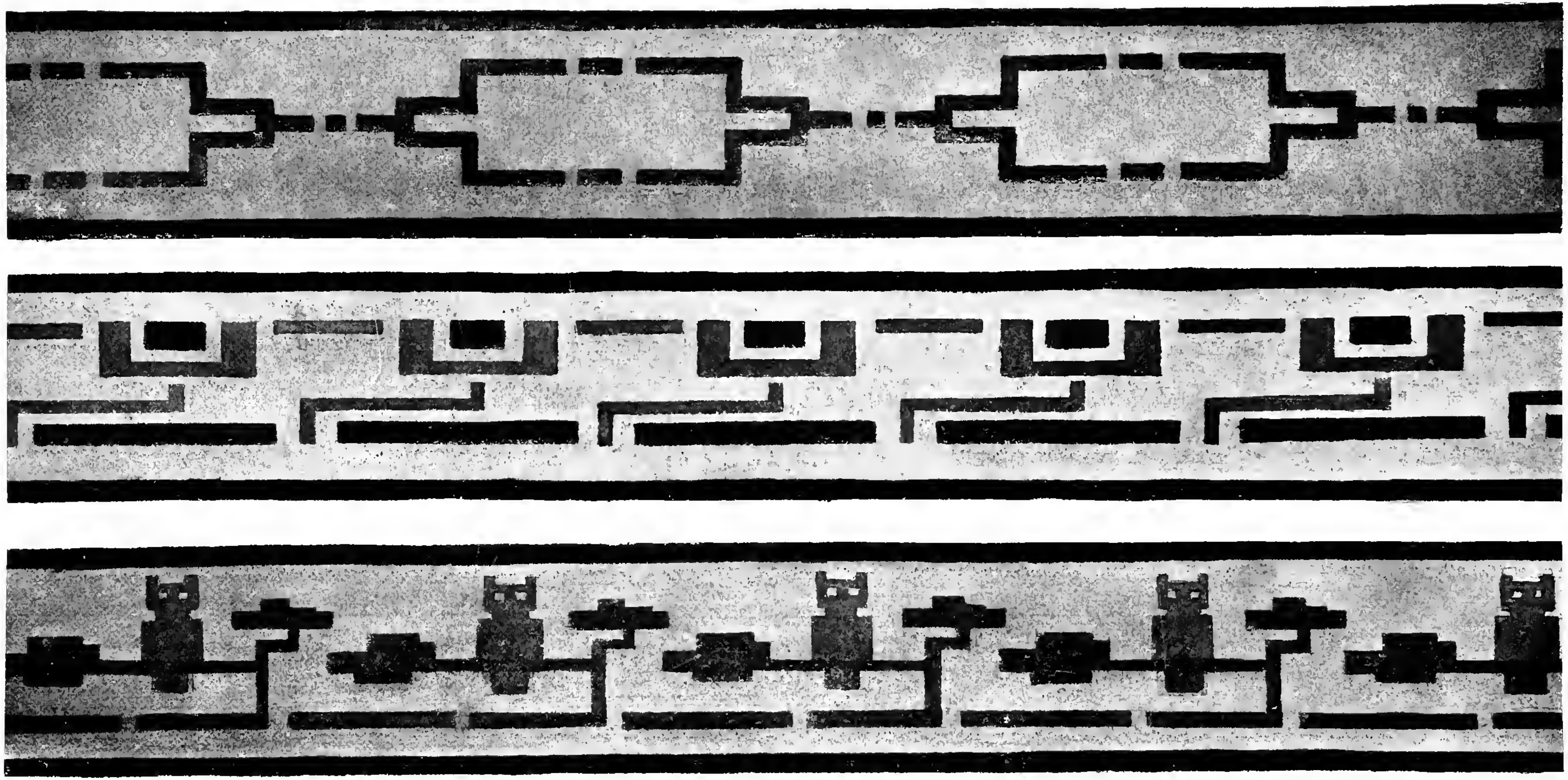


For silk.



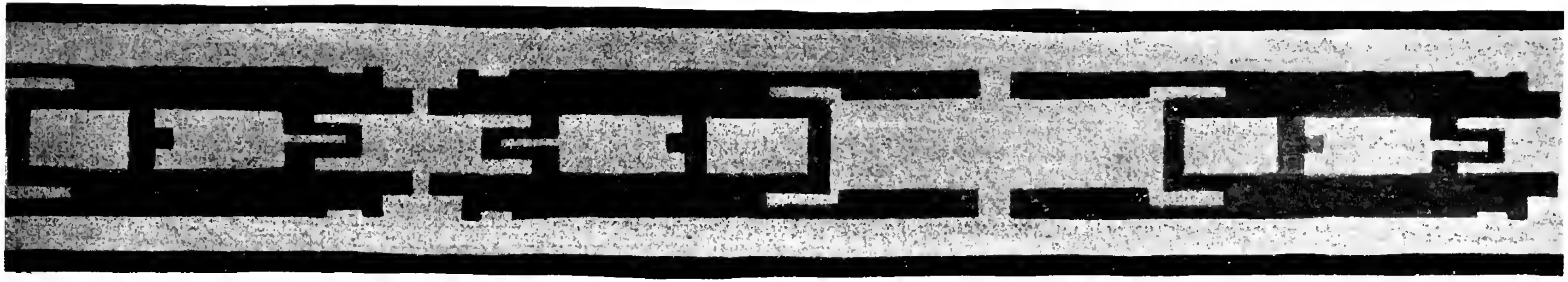
For modeling.

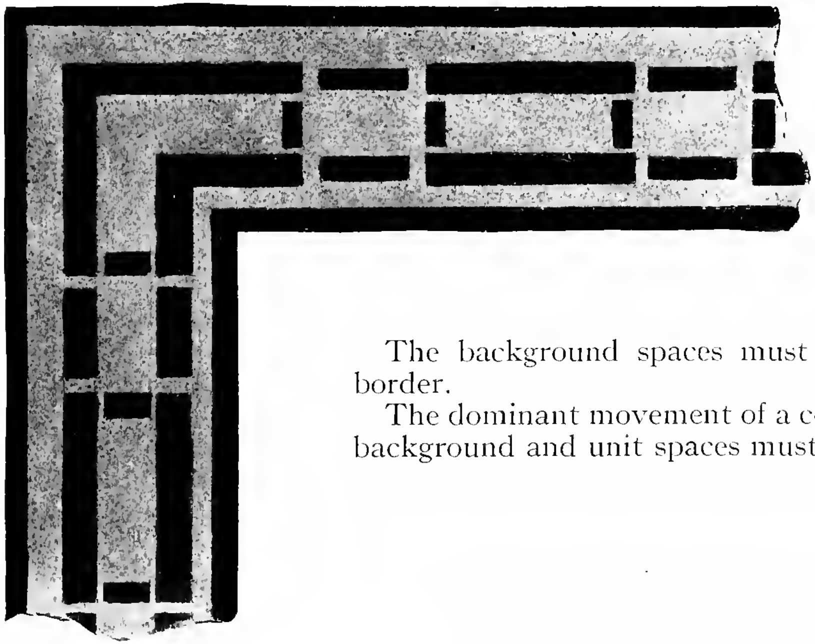
PLATE LIX. BORDERS

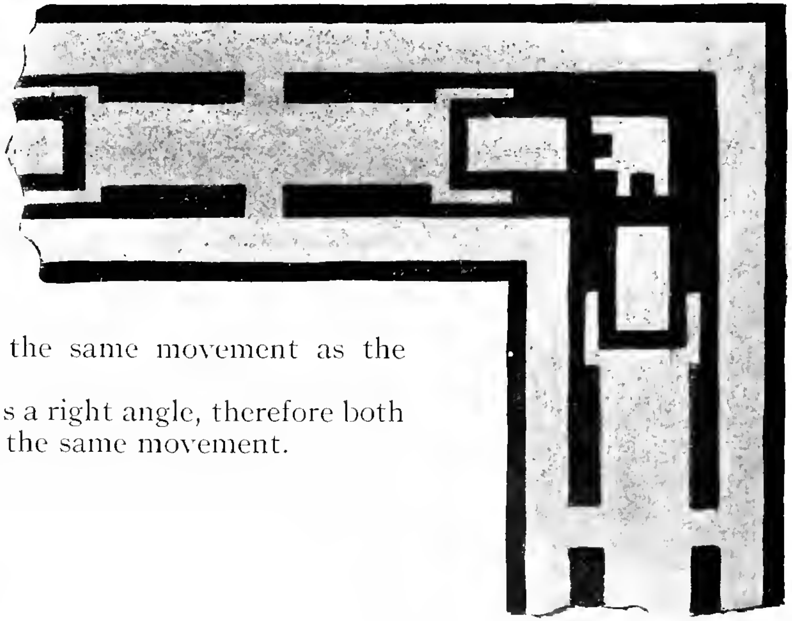


In these borders the dominant movement is horizontal, therefore the dominant movement of the repeated unit must be horizontal.

PLATE LX. BORDERS







The background spaces must have the same movement as the border.

The dominant movement of a corner is a right angle, therefore both background and unit spaces must have the same movement.

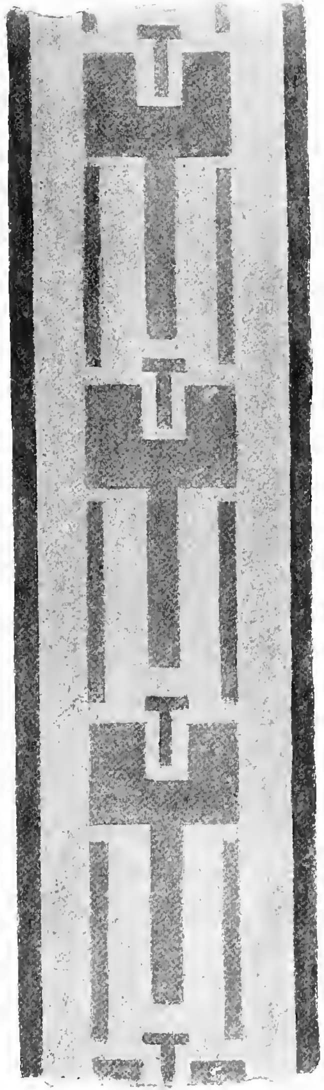
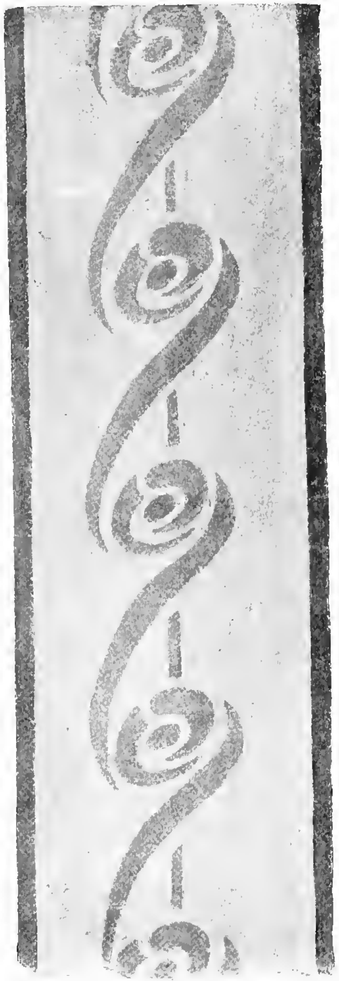
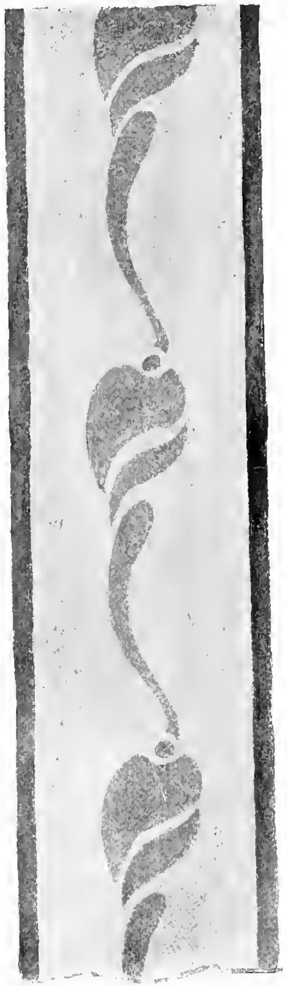


PLATE LXI. BORDERS

The dominant movement in these borders is vertical, therefore the movement of the unit and background spaces should be vertical.





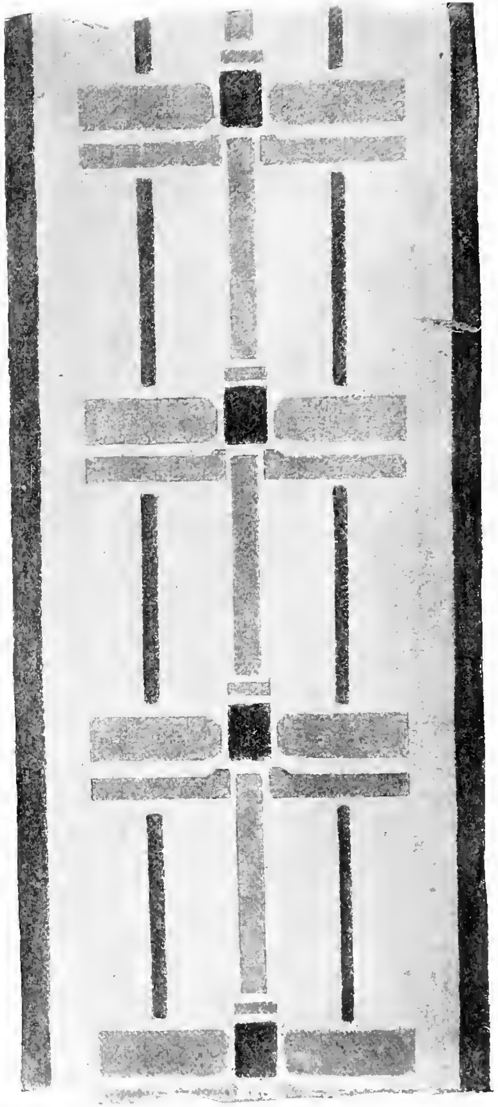
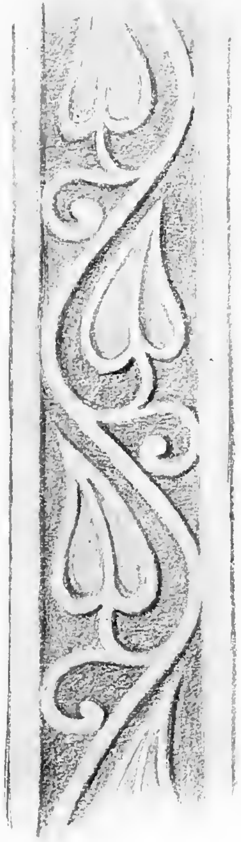
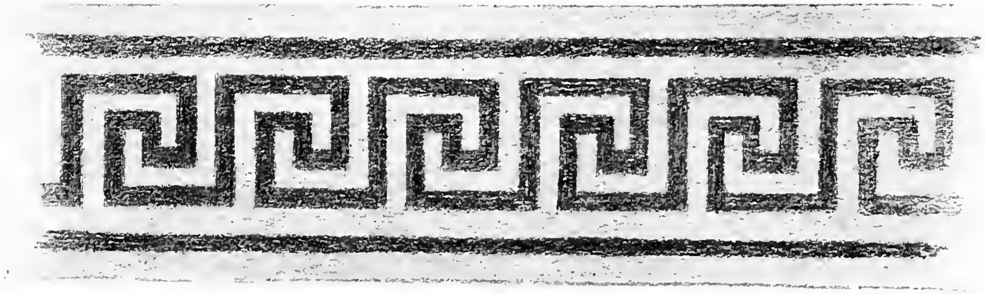


PLATE LXII. BORDERS FROM HISTORIC ORNAMENT

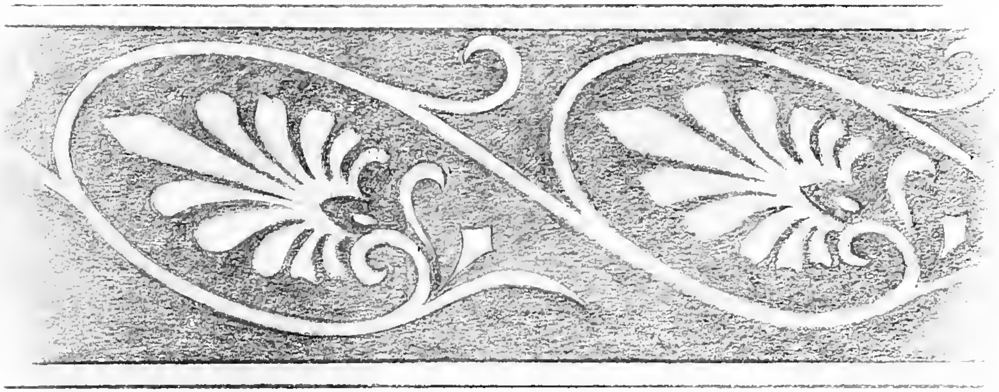
Historic borders should be studied for the flow of lines from one unit to the other, for the movement in the unit itself and for the arrangement of the background.



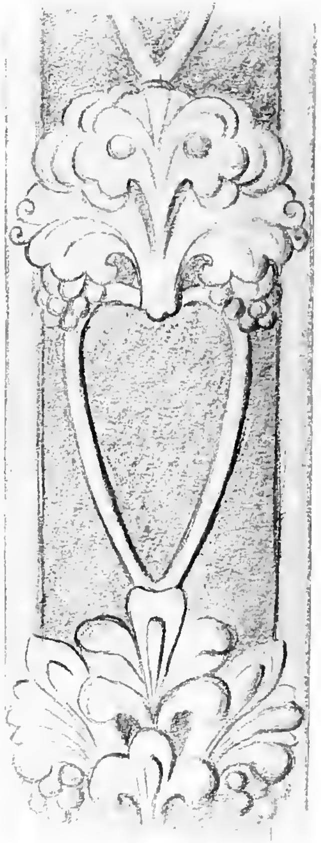
GOTHIC



GREEK

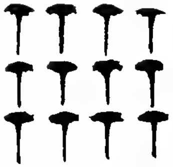


GREEK



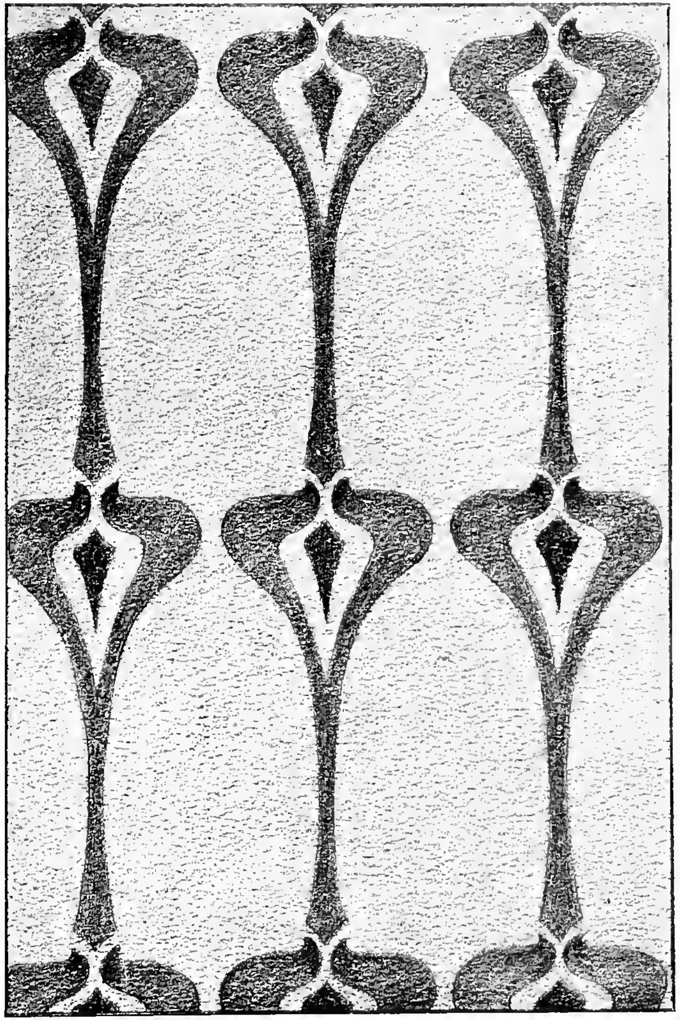
BYZANTINE

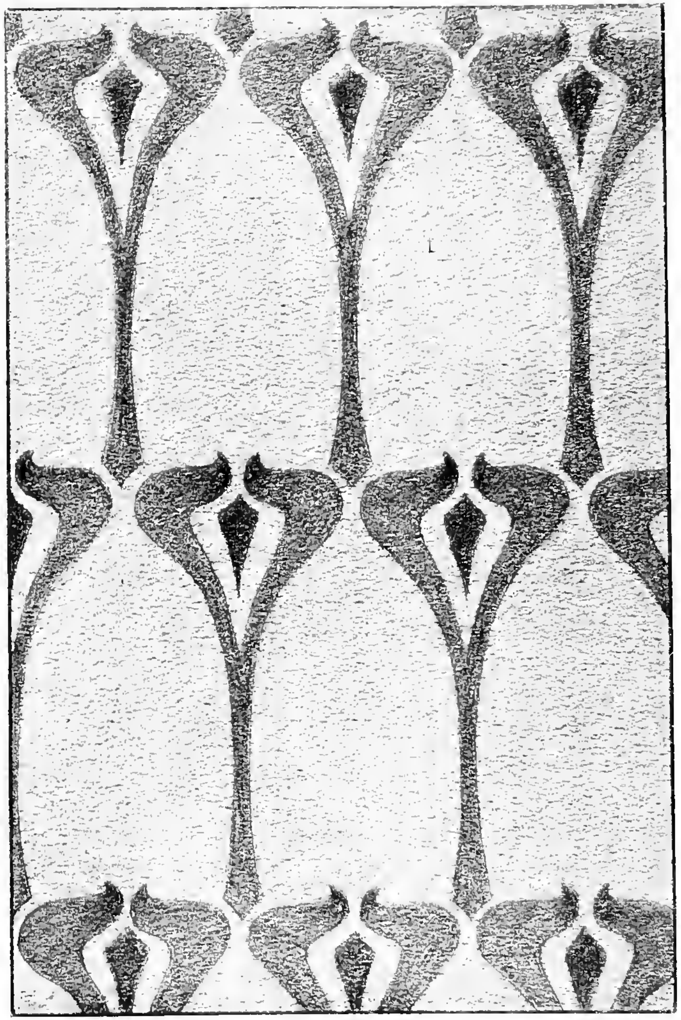
PLATE LXIII. SURFACE PATTERN

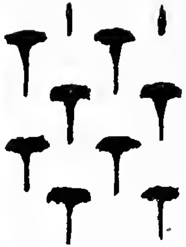


REGULAR REPEAT

The unit is repeated in regular rows, which are both horizontal and vertical.





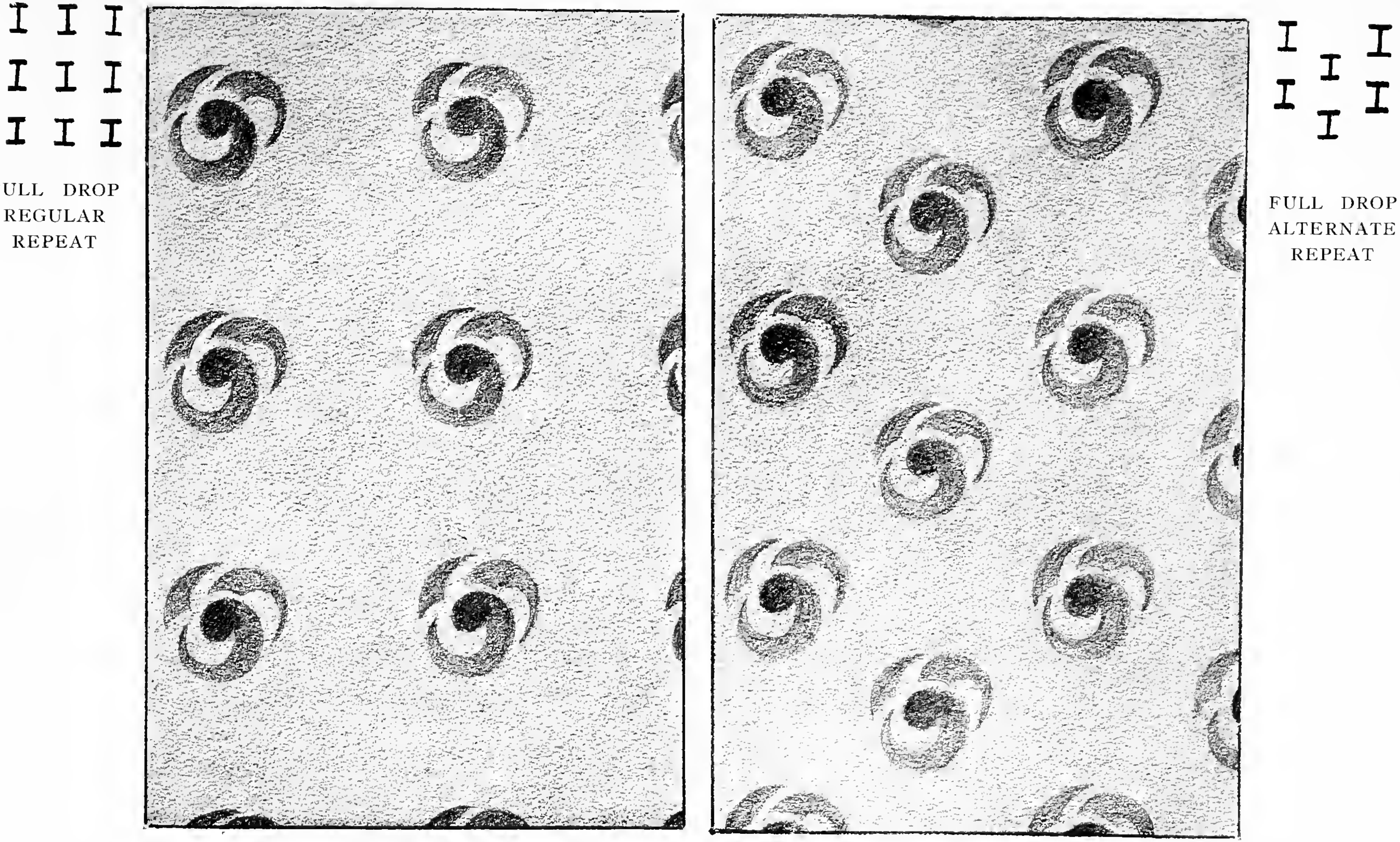


ALTERNATE REPEAT

The unit is repeated in alternating rows.

Arrange the units so that the eye travels from one unit to the other.

PLATE LXIV. SURFACE PATTERNS

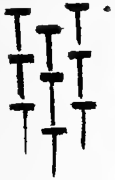


FULL DROP
REGULAR
REPEAT

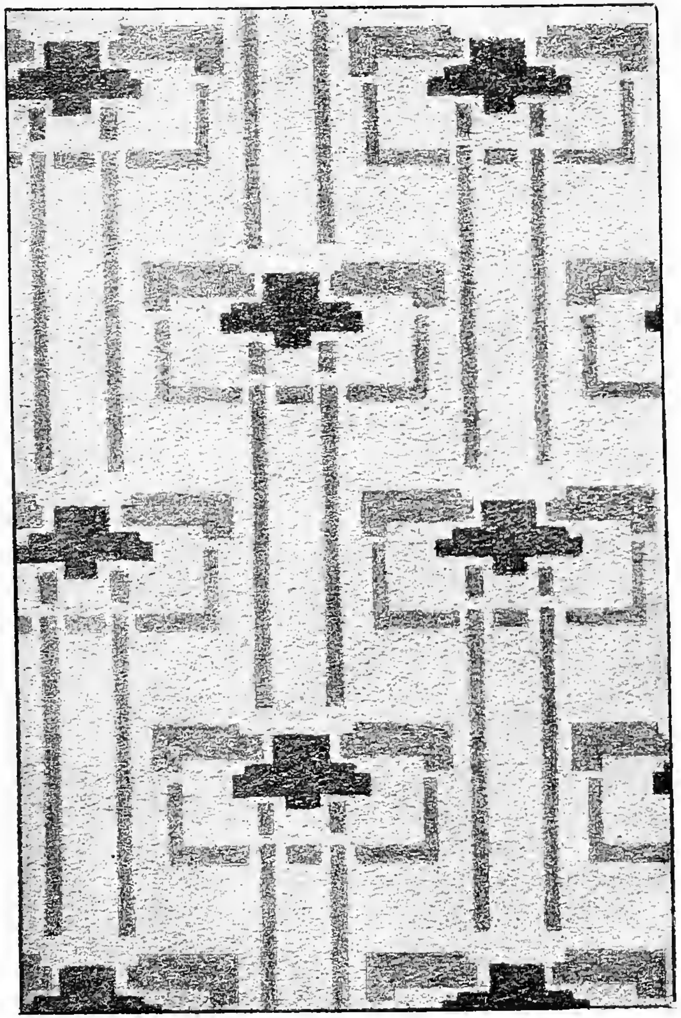
FULL DROP
ALTERNATE
REPEAT

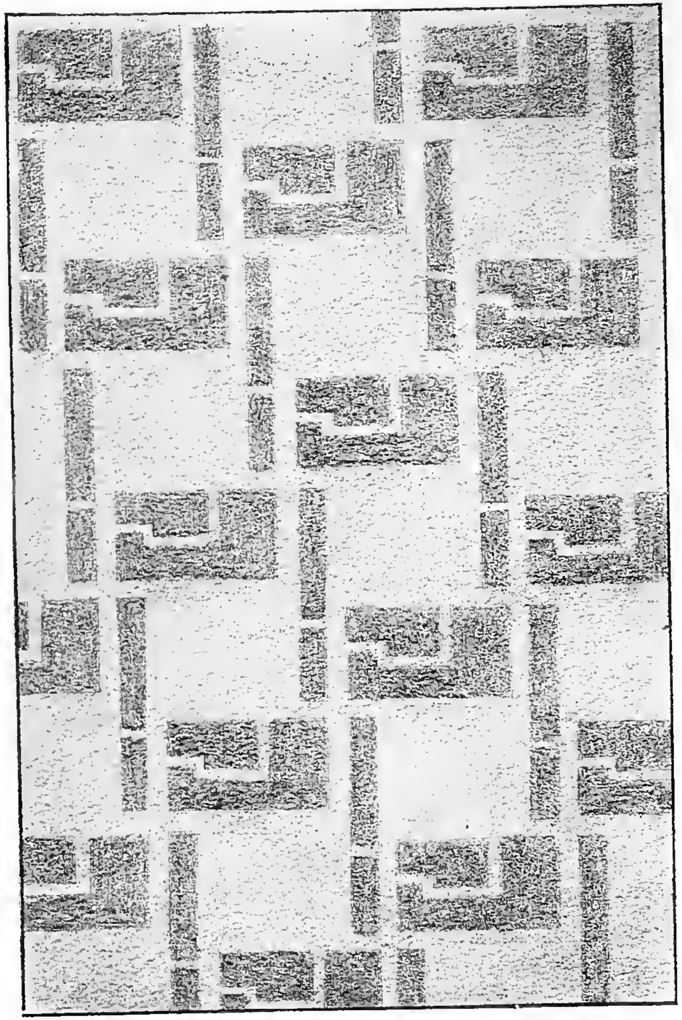
The area of the background sustains a subtle proportion to the area of the unit.

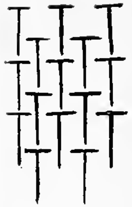
PLATE LXV. SURFACE PATTERNS



ONE-HALF
DROP
REPEAT





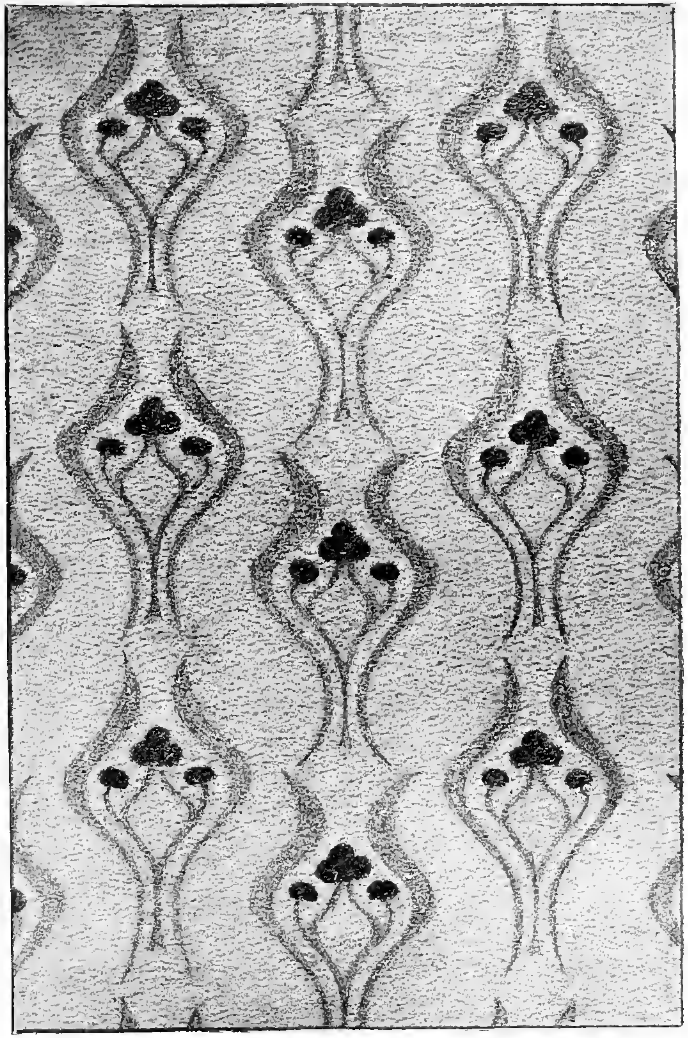


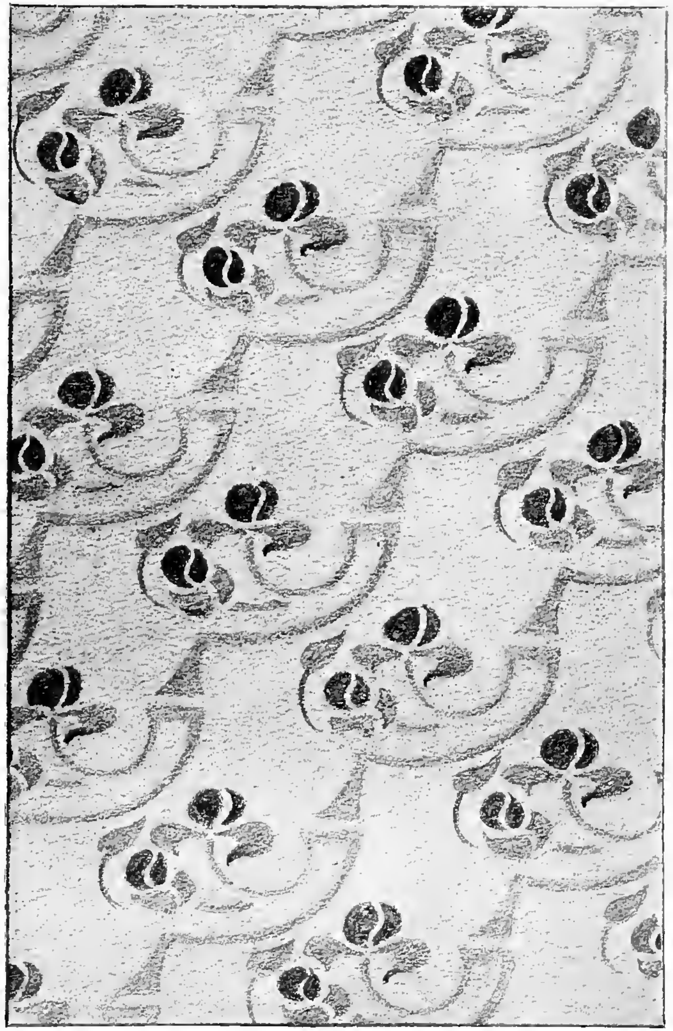
ONE-THIRD
DROP
REPEAT

The divisions of the background are as essential to the design as the unit.

PLATE LXVI. SURFACE PATTERNS

RHYTHMIC
REPEAT

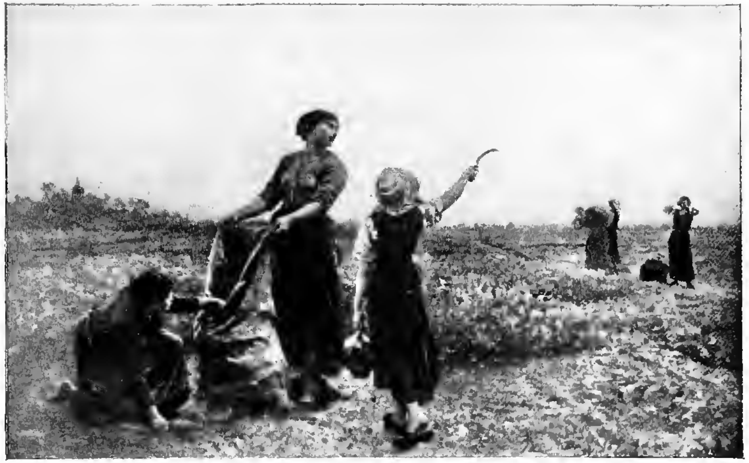




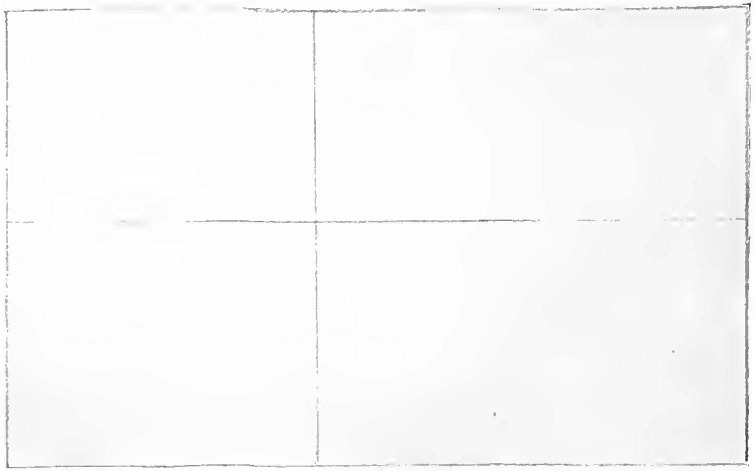
RHYTHMIC
REPEAT

The movement of the background must be consistent with the movement of the unit.

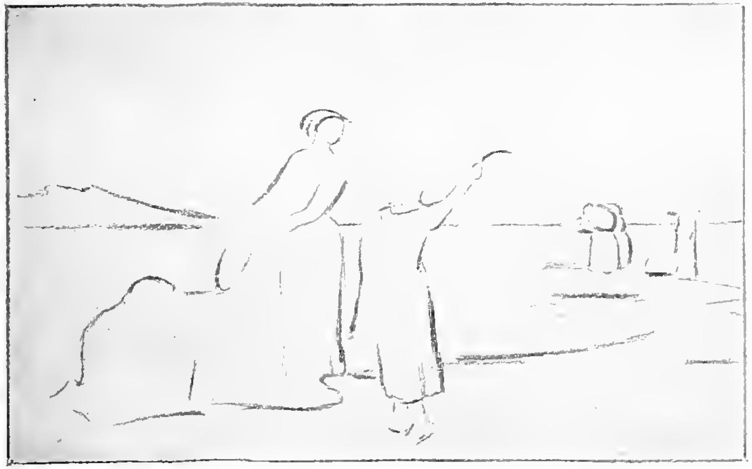
PLATE LXVII. PICTURE STUDY



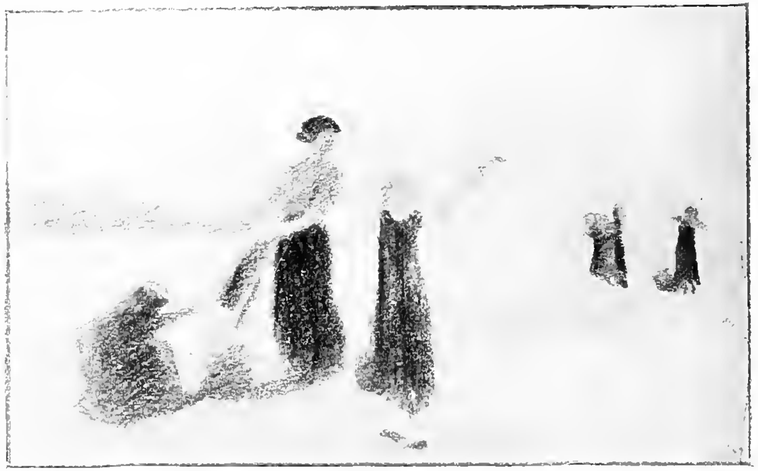
THE END OF LABOR *JULES BRETON*



Exemplifying space division.

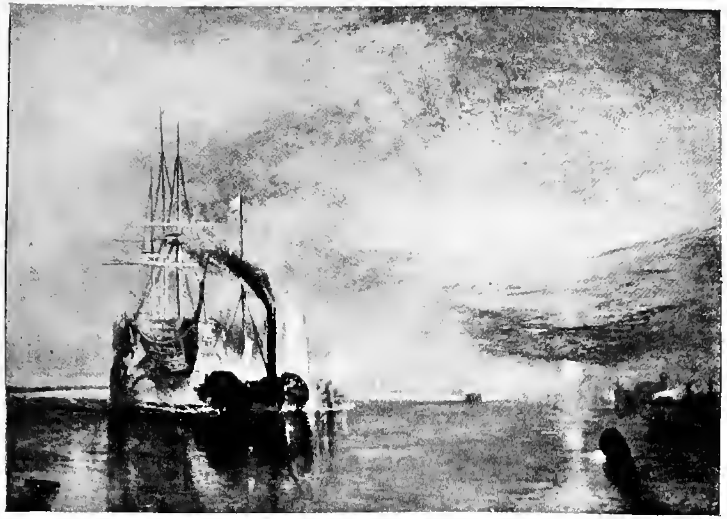


Movement of lines emphasizing point of interest.

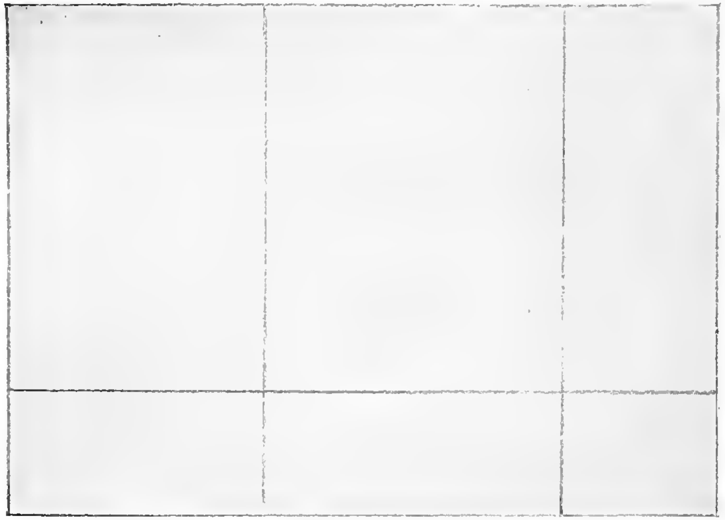


Balance of tone.

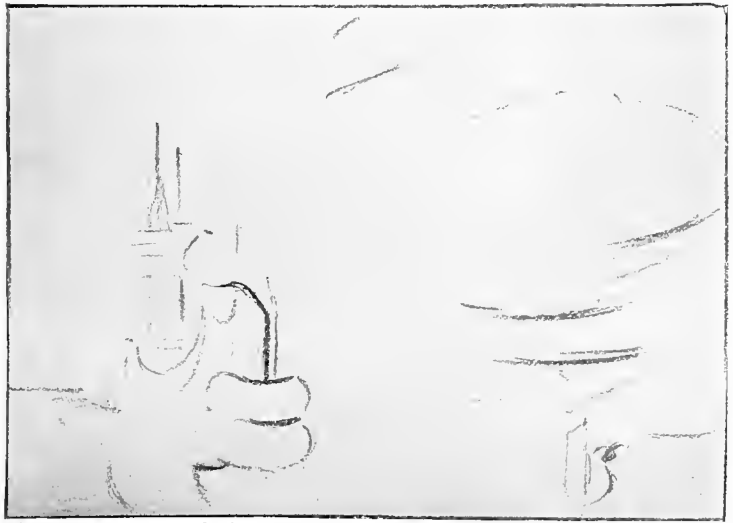
PLATE LXVIII. PICTURE STUDY



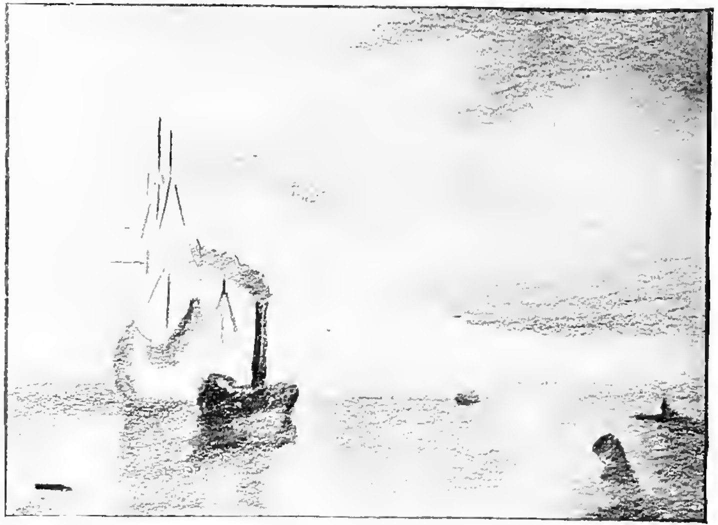
THE OLD TEMERAIRE *TURNER*



Exemplifying space division.

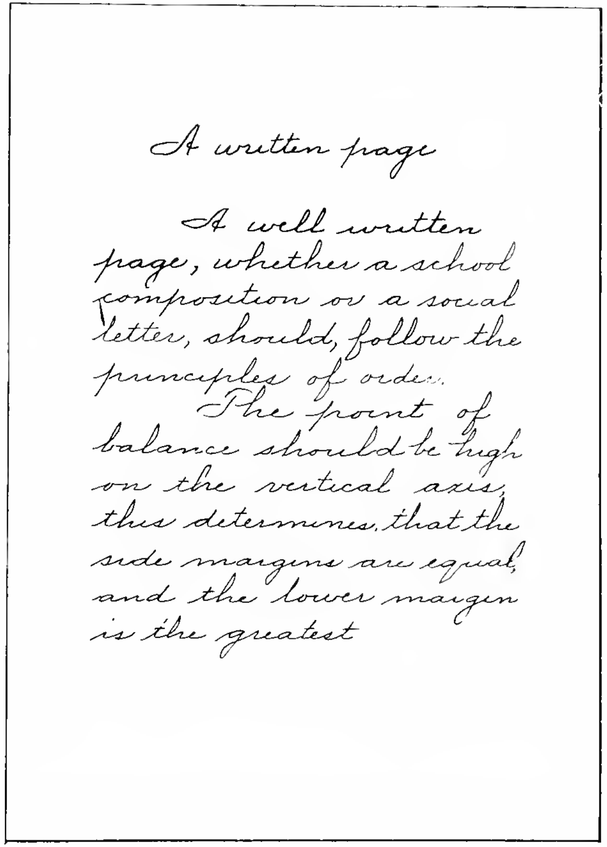


Movement of lines, emphasizing point of interest.



Balance of tone.

PLATE LXIX. A PAGE ARRANGEMENT



A written page

A well written page, whether a school composition or a social letter, should follow the principles of order.

The point of balance should be high on the vertical axis, this determines, that the side margins are equal, and the lower margin is the greatest

· A PRINTED PAGE ·

TO OBTAIN THE BEST EFFECT, A PRINTED PAGE IS ALWAYS SPACED WITH THE WIDEST MARGIN AT THE BOTTOM, BRINGING THE POINT OF BALANCE HIGH ON THE VERTICAL AXIS.

THE PAGE STUDIED THUS AS A DESIGN DEVELOPES A CORRECT SENSE OF PROPORTION SO THAT ONE WILL INSTINCTIVELY MOUNT AND HANG A PICTURE CORRECTLY. · ·

PLATE LXX. PICTURE MOUNTING